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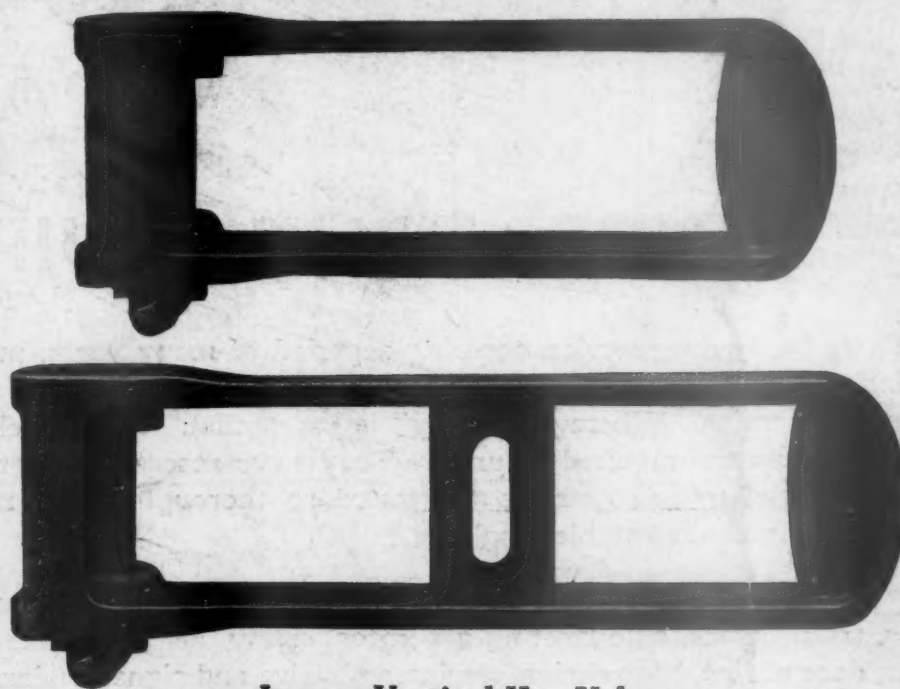
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EDITORIAL



Railway Age

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Obey the Order of the Car Service Division!

THE CAR SERVICE Division of the American Railway Association has issued an important order requiring a large and immediate movement of box cars from eastern to western lines.

This order should be carried out promptly and literally. The western lines, especially those in northwestern and central western territory, recently have suffered a very serious reduction of the number of box cars on their lines, and they need all of them they can possibly get, and more, to satisfy the demands of their shippers. The order issued may be criticised as drastic. The plain fact is, that the conditions which have caused it to be issued are due to extensive violations of car service rules. If the railways on whose lines the cars have accumulated had obeyed the car service rules in the past, the present condition would not exist and the order issued by the Car Service Division would not have been necessary.

The existing situation presents plainly and directly the question whether, in respect to freight car distribution, the railways are capable of self-government. Having brought about the present situation by extensive violations of rules made by themselves, and which they are pledged to observe, they have now made it necessary to raise the question whether they will or will not promptly, faithfully and completely carry out an order issued by the Car Service Commission, which they themselves created and maintain to deal with just such situations as the present.

The railways are always on trial. They are especially on trial now. Will they show they are capable of self-government by obeying the orders of their own Car Service Division, or will they fail to do so, and thus afford good reason for the exercise by the Interstate Commerce Commission of its legal authority to take control of the distribution of cars when the railways themselves do not handle it efficiently and satisfactorily?

Every railway officer knows what will be said if the Interstate Commerce Commission has to take control of the distribution of cars. It will be said that *the machinery of the railways for handling the distribution of cars under private operation has broken down, and the statement will be true.*

The railways would have to obey an order pertaining to this matter issued by the Commission or take the heavy penalties provided for violations of the Transportation Act. If they could and would obey an order of the Interstate Commerce Commission they can and should obey the order of the Car Service Division.

The State of New Hampshire was the first state to take effective legal action to have warnings set up on the highways, 300 ft. short of each railroad crossing, so that the reckless automobile driver should no longer excuse himself by the plea that he did not know the railroad was there. Its public

The Human Versus the Machine Flagman

service commission has now taken another notable step, in setting forth the truth concerning the watching of crossings. Deciding a case at Newfields, on the Boston & Maine, the commission says unequivocally that a good visual and audible signal, on a post, in service 24 hours a day, is a better watchman than the human attendant on duty 12 hours a day. The decision is reported on another page. To thoughtful and well-informed persons, this truth is already well-known, but it is a very good thing to have it formally and officially set forth in this definite fashion. Like many other truths, many people know it, but do not know it well enough. The New Hampshire decision abolishes a practice of *fifty years' standing*. It also voices another economic idea which needs to be kept in mind much more than it is, namely, that a wayfarer who gets in the way of a train and causes damage to the locomotive or other property of the railroad ought to pay a proper penalty in money. This theory is being put to the test occasionally. The Central of New Jersey secured a verdict for \$300 the other day against the owner of an automobile truck that was wrongfully on a crossing.

One of the most important sessions of the coming meeting of the National Personnel Association, the program of which is

Economics for Railway Men

noted elsewhere, is that on "Economics for Employees." Incidentally, it is, of course, first necessary that the executives and managements have a thorough understanding of economics as applied to their particular industry. Unfortunately much is still to be desired in this direction. The Christian Century in an editorial comparing labor unions in England and in America, in one of its recent numbers, makes this statement: "It is quite likely, too, that British employers, as contrasted with American, read economics rather more than their American cousins. Hence, they do not have the blind reactions in labor disputes that so often characterize American business men." A leading authority on this question—a practical economist of rare talent—in commenting upon editorials on the personnel question which have recently appeared in the *Railway Age*, makes this suggestion: "I feel that until the managers begin to instill some knowledge of economics into their personnel relations, there is not going to be very much progress in solving the labor problem. Bonus plans, profit sharing, welfare work, and all the numberless schemes for industrial democracy will never get far until they are tied up closely with the economic significance of their bearings. I believe if you could get in a few licks on the subject of the necessity of getting the right kind of economic information to the employees that you would be working right at the heart of the question rather than on the

edges." It is hardly necessary to make further comment except possibly to again remind our readers that this is one of the greatest tasks now confronting railway managements and that it demands immediate attention.

With the withdrawal of allied troops from Siberia the United States, along with Great Britain, France, Italy and Japan, has relinquished all control which it has exercised over the Chinese Eastern—the Chinese section of the Trans-Siberian Railway. The affairs of the Chinese Eastern have, since 1918, been managed by an inter-allied committee at Vladivostok and a technical board at Harbin. In the management of the road the United States has been represented by John F. Stevens. In relinquishing control of the railway to the Chinese government, our government has called to its attention the necessity for increasing the efficiency of the road's operation, making provision for greater safety for employees and passengers and safeguarding the interests of foreign investors and creditors. Attention is called to the important contribution which our government has made toward the maintenance and operation of the property, "both materially and through the services of the distinguished American engineer, John F. Stevens, and his assistants." The future operation of the Chinese Eastern will be watched with interest in this country, not only from a railroad standpoint, but from that of national policy. When order returns to Russia and the Trans-Siberian Railway is made into an avenue of traffic in keeping with its potentialities, the Chinese Eastern will assume a place of increasing importance; keeping it in efficient operation and free to the traffic of all nations will be a task which the Chinese government should exert every effort to carry out.

Over a week has now passed since the Pennsylvania directors voted in favor of restoring the dividend rate to 6 per cent. One writing at this time, therefore, has been given the opportunity of seeing the interesting reaction which has been evidenced in the press and elsewhere. In truth, one hesitates to decide which is the more important (a) the significance of the restoration of the 6 per cent rate as indicating that the Pennsylvania has finally left behind it for good and all the adverse effects of the war and government control period, or (b) the congratulatory manner in which the Pennsylvania's action has been received by the editorial writers. From the point of view of news probably the latter is the more important. The Pennsylvania this year continued with the remarkable come-back which it staged following the end of government control; it came through the shopmen's strike rather better than almost any other road and its earnings statements have been so uniformly good for several months that the declaration of the 1½ per cent dividend was quite according to expectations. The Pennsylvania management has been conducting its operations so as to aim at the 6 per cent for several months past and the stockholders have had a promise that the higher rate would be restored at the earliest opportunity. In speaking of the other angles of the situation it is difficult to refrain from platitudes about such things as the Pennsylvania's reputation for conservative financing, the wide distribution of the stock in small holdings and the favorable public opinion concerning its activities in general. The Pennsylvania has for many years been in that much to be envied position that these attributes have been regarded almost as commonplaces. These things serve to emphasize that the Pennsylvania stockholders were called upon—when

their dividend was reduced to 4 per cent—to bear a considerably heavier burden than stockholders in a company of the Pennsylvania's standing should in all fairness have been called upon to bear. The situation will enter railroad history as a standing indictment of the way in which the railroads were treated during the war period. There is a great deal of pleasure in noting the manner in which the press shows its realization of this very patent fact.

It is a bit early to attempt to say what the total earnings of the Class I carriers will show for September when all the monthly reports are in. Those reports that have been made public, however, indicate plainly that the net for the month will probably not prove as good as many expected. The end of the coal strike, which was finally brought about in the latter part of August, was reflected in gradually increasing coal loadings during September. Whereas the coal loadings for the week ended September 2 were reported by the Car Service Division as 149,487, for the week ended September 30 they had reached 189,349. This increased business, however, has not been reflected in any appreciable manner in the September net. The explanation is, of course, simple, for it lies in the expenses due to the railway shopmen's strike. Most of the roads whose September reports we have seen show fairly imposing increases in their maintenance of equipment expenses with corresponding effect on the operating ratio and, of course, on net income. The following gives an abstract of the figures of net railway operating income for a small group of roads for September and for the nine months. It will be noticed that the larger part of them show net for September this year less than that for September last year; in two cases there are actual deficits. The outstanding feature in the figures, however, is of opposite character in the form of the Pennsylvania's report. Its increase in net for the nine months—\$32,811,515—is interesting commentary on the recent restoration of the six per cent dividend rate:

NET RAILWAY OPERATING INCOME

Road	Sept., 1922	Inc. or Dec. compared with Sept., 1921	Nine months 1922	Inc. or Dec. compared with last year
Atlantic Coast Line.....	1,024,367	1,011,390	10,839,608	7,866,317
Baltimore & Ohio.....def.	2,665,952	-5,721,488	12,491,220	-2,779,977
Chicago, Milwaukee & St. Paul	1,564,107	-817,721	7,981,071	5,410,325
Great Northern	1,836,120	-1,382,636	10,084,242	5,871,607
Lehigh Valley	295,976	-1,867,263	740,832	-1,972,467
Illinois Central	2,677,011	1,072,125	17,971,663	4,150,999
New York Central.....	3,111,204	-2,317,209	35,657,023	2,839,643
New York, New Haven & Hartford	1,245,279	576,788	9,860,468	12,879,647
Pennsylvania Railroad.....	6,298,532	2,456,637	56,712,505	32,811,515
St. Louis-San Francisco....	731,032	-1,163,513	11,139,414	-1,767,166
Southern Pacific System....	5,805,586	604,978	31,304,080	3,967,640
Union Pacific System.....	3,325,281	-2,261,276	19,879,242	-3,642,265

It is self-evident that the small annual net earnings of the railroads in recent years have discouraged investors to such an extent that capital needed to expand the railroad plant in proportion to the normal expansion of business could not be obtained. Necessary new equipment could not be purchased nor repair facilities properly maintained. This is why, in many cases, railroad shops and enginehouses are equipped as at present with so many machines which are antiquated, inefficient and costly to operate. The second reason may be laid to mechanical department men who have taken old machinery too much for granted, either entirely failing to show the managements how much money could be saved by the installation of modern equipment, or else becoming discouraged after once pointing out the needs and getting no action. There are

Pennsylvania Again Pays 6 Per Cent

A Constructive Machine Tool Program—Its Fate

many progressive mechanical department officers on the other hand who do realize the savings possible by new equipment, but whose hands are completely tied by the physical inability of the railroads to provide the appropriations needed. For example, about two years ago the superintendent of motive power of a road having four repair shops of medium size made an exhaustive survey of all his shop machinery, listing separately the machines which were over 30, 20, 15, 10, 5 and under 5 years old. The exact order in which these machines were to be retired was indicated, together with the types of machines needed to replace them and the savings possible. This constructive program was to be spread over a period of ten years, it being proposed to spend \$275,000 for new machinery each year. Owing to financial stringency, the railroad in question was absolutely unable to carry out this program and in the two years since it was initiated, three machine tools only have been purchased. It is important that railroad mechanical departments present constructive machine tool programs to the managements as forcefully as possible; in many cases, money thus spent will pay higher returns than if invested in new rolling stock. The greatest need of all, however, is the abolishment of those phases of government regulation which prevent the railroads from operating their own properties with sufficient net earnings to provide for normal growth and expansion. Incidentally, the case mentioned affords a striking example of railroad shop neglect, be it avoidable or otherwise, which is all too common. For years the railroads have not spent enough money for new machinery and shop equipment to replace that which was worn out, let alone take care of new and heavier rolling stock.

The appointment of John G. Walber as vice-president in charge of personnel for the New York Central System is significant, and particularly so at the present time. No definite statement has been given out as to his exact duties and responsibilities, but presumably they will include those ordinarily associated with an executive personnel officer in the industrial field. It was A. H. Smith, president of the New York Central System, who made the statement in testifying before the Senate Committee on Interstate Commerce a year or more ago, that "the efficiency of a railroad depends principally upon its men. It is estimated that 95 per cent of railroading is human." Unfortunately entirely too little attention has been paid to the human element on the railroads, as was noted particularly in the editorial in the *Railway Age* of September 16 on "Developing Machinery and Neglecting Men." On the other hand two of our largest railroad systems, the Pennsylvania and the New York Central, now have vice-presidents who are charged with the responsibility of seeing that the human element is fully understood and developed. Other railroads are taking a keen interest in these developments and many of them are working on similar programs, but of less ambitious nature. Students of industrial progress in Great Britain and America have stated that American industrial managers were many years behind those of Great Britain on this personnel question, because the British industrial leaders had recognized the folly of fighting organized labor and had awakened to the remarkable possibilities of having the unions work with them rather than against them. The events of the past year have apparently made a deep impression upon the minds of many of the leaders of organized labor in this country and upon the more thoughtful element among the employees. Is the time not now ripe for taking advantage of this and developing within each of the individual railroads that spirit of co-operation and teamwork which is so essential to the success of any organization?

Another Personnel Vice-President

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Entertaining business men at luncheon in its shops is one of the recent activities for improving public relations which the

Entertaining Guests in Shops

Central of Georgia has undertaken. At Macon, Ga., the Rotary and Civitan clubs have thus far been guests of the railroad, and other organizations of business men will be entertained in a like manner. Luncheon is served in the machine shop to employees and guests. There are a few short talks and then the guests are taken for a tour of inspection of the shops. Business men thus have an opportunity to see something of the railroad at first hand and, perhaps, to revise any unfavorable opinions they might have concerning the effects which the strike has had on the efficient operation of the railroad. These luncheons have been a decided success. Not only have they aroused the interest of the guests and tended to make them think favorably of the railroad; they have also aroused the same feelings in the employees, putting them in the position of hosts to leading business men of the community. The Central of Georgia has been unusually successful in its public relations work and one of the reasons for this is that it has not been content with half-measures. Before us is a copy of the menu of the luncheon given to the Civitan club at Macon on October 20 and on it are listed, not sandwiches and coffee and such simple fare as one might expect to be served in a railway machine shop at lunch time, but an elaborate five-course luncheon—a worthy example of the Central of Georgia's thoroughness in its public relations work. The menu was attractively printed for the occasion and, in addition to the bill of fare, gave some facts about the railway of interest to Macon business men, i.e., number of employees in Macon, annual payroll, value of shops, taxes paid to city and state, etc. The cost of the entertainment to the railroad would be well worth while if it did no more than fix firmly in the minds of the guests the few facts printed on the menu card, but it undoubtedly in every case has done more than that. The management of the Central of Georgia evidently agrees with the assertion which has often been made in these columns that "selling" the railroad to the public and to its employees is as important a task as is running trains or maintaining its equipment and track. Having this belief, it is translating its faith into performance.

The decision by the University of Michigan to establish a chair of Transportation Engineering and the announcement

An Important Step for Transportation

of the appointment of John S. Worley, formerly a member of the Engineering Board of the Bureau of Valuation of the Interstate Commerce Commission, to that position, means much to the railways and to those dependent upon this industry for service. As expressed by an officer of the university who has been largely instrumental in the development of the plans for this department, it is not the intention of the university to turn out a large number of mediocre men who may ultimately rise to the positions of instrumentman or division engineer, but to help develop a few high-class men who may rise to executive positions in railway service and to give courses which will be taken by many students who will never enter the transportation industry but who through that work will make more intelligent citizens. This action by the University of Michigan, like that which led to the creation of the James J. Hill chair of Transportation at Harvard University, is a recognition on the part of educators and leaders in the transportation industry of the need for trained men for executive service on the railways. Railway operation is rapidly becoming an intricate science which not only requires the highest ability but training in the methods of analysis. The new era of transportation in which we are now entering is requiring greater refinement in methods and

the development of economies not heretofore realized through the more intensive use of facilities of all kinds and the rendering of the maximum transportation service with the minimum expenditure. A recent compilation showed there are one or more men of engineering and maintenance of way training now holding executive positions on roads aggregating more than 50 per cent of the mileage of the United States and Canada. When to this number are added the men who have had collegiate training in other courses the influence of college training in transportation can be realized. The decision of universities of the standing of Michigan and of Harvard to undertake the training of men specifically for transportation service is a development of much importance to this industry which it should foster in every way.

Dealing with the Labor Problem

THE MANAGERMENTS of some of the railways recently have made or are now making important changes in their organizations to deal with the labor problem. The Pennsylvania system has had for some time a department of personnel with a vice-president in charge. The New York Central has just created the office of vice-president in charge of personnel. The Rock Island some time since created the office of assistant to the president in charge of personnel and public relations. A few other examples of the same kind might be cited.

Such changes in railway organizations are being made in recognition of the fact that the labor problem on the railways, as well as in many other industries, has undergone a radical change within recent years.

The conditions of employment in industry have been revolutionized by the great increase in the size of industrial concerns, by popular education and by other important causes. In consequence the attitude of employees to their jobs, especially in large scale industries, has changed greatly within the last quarter century, and especially the last 15 years. Of no other industry has this been more true than of American railroads. The great increase in the size of railroad systems has increased even geographically the distances between most railway employees and the owners and chief executive officers. When a railroad with 3,000 miles of line was a big system, most of the employees were nowhere near as far from the principal executive officers and the owners in merely a geographical sense as they are now when many systems have from 3,000 to 20,000 miles. But in another sense the distance between the employees and the executive officers and owners has been increased much more. It has been increased so much by the results of government control and by radical propaganda that in the minds of many railway employees the ownership of the railways is indicated by two words—"Wall Street," and the executive officers are regarded as agents of Wall Street who are paid high salaries to do its bidding in dealing with employees and the public.

How many reflect upon what these conditions mean to the railroads in relation to efficiency of operation and to their future operation and ownership? There is an old warning regarding the results of trying to put new wine into old bottles. New conditions demand new methods. All change is not progress, but no progress was ever made without change. In spite of the revolution which has taken place in the labor problem no important changes in organizations or methods for dealing with employees have been made on most railways. The view seems to prevail on most of them that if the old methods are used long enough and energetically enough they will finally restore the old labor conditions of efficiency and loyalty. On the other hand, the managements of some railways believe that changes in organization and methods must be made if the labor problem of today is to be solved. They are acting accordingly, and they are right.

The plans they are adopting differ, but they have the same purpose. This purpose is to find out what the employees are really thinking, what they really want, and what must be done to bring about new relations between them and the railways which will be beneficial to both.

The first prerequisite to the solution of any new problem is to find out that there really is a new problem and exactly what it is. There always has been a labor problem in industry. There always will be. It always has been a changing problem, and it always will be. It has changed so much on the railroads within recent years that it has become a new problem. Anybody who does not recognize the fact as it presents itself today it is a new problem will struggle with it in vain.

It having been once determined that there is a new problem and what it is, the next thing needed is to work out a new method for solving it, and try it. If it does not work, still another method should be tried.

Neither on the railroads nor in any other industry will the labor problem be solved until the employees are treated fairly and as well as economic conditions will permit. One of the primary duties of a personnel department is to investigate working conditions and provide remedies for all conditions about which employees reasonably complain or might reasonably complain. Another essential to any real solution of the labor problem under modern conditions is that the door of the management shall be kept wide open to receive the complaints and suggestions of employees. But every employee cannot come to headquarters with his complaints and suggestions. Therefore, employees must be given an opportunity to communicate and deal with the management through representatives of their own choosing.

The railways have persistently opposed national negotiations and agreements with labor unions. Those railways which have not made settlements with striking shop crafts unions have a real opportunity to make satisfactory agreements for dealing locally with employees in their own shops. The greatest mistake which these railways could make—and it is a mistake some, if not many of them, seem in danger of making—would be to attempt to dictate the exact kind of organization their shop employees should form, the way that they should choose their representatives to deal with the managements, and the way in which the dealings between these representatives of the employees and the officers of the railway should be carried on. The entire scheme for local dealings between the shop employees and the railway managements should be worked out in conferences between representatives freely chosen by the employees and managements.

In the long run, no plan for local negotiations and settlements which is merely "handed down from the top shelf" by the managements will satisfy the employees and bring about a good understanding and close co-operation. There is a spirit among the working class today which causes intelligent working men, whether conservatives or radicals, to desire a real voice in settling questions the settlement of which will affect their welfare, and no management which does not recognize this spirit as reasonable and laudable will establish relations with its employees which in the long run will inspire loyalty and secure efficient work. The so-called "company unions" must be allowed and encouraged to become real employees' unions, or in the long run it will be found that most of the shop employees have become members of other and larger unions and that these other and larger unions will again have to be dealt with.

One of the most important influences which have made the labor problem on the railways what it is today is the propaganda against private management of railways, and the still more radical propaganda against the entire present industrial system, which has been and still is being so extensively carried on among railway employees. How many railway officers who deal with labor read the weekly and monthly

publications of the labor organizations which are being read by employees? Those officers who do not read them should begin to do so. If they read them they would get light which they much need on one of the principal reasons why the railway labor problem has become what it is today. This propaganda has poisoned and is still poisoning the minds of hundreds of thousands of employees against their officers, against private management of railroads, and against the entire present industrial system. If the railroad labor problem of the present is to be solved, this propaganda must be met and its effects nullified by presenting to employees the real facts about the railroad business, including the part of total railway earnings that go to labor, the part that is spent for materials and supplies, the part that is paid out in salaries and the reasons why some large salaries must be paid, and about the part that goes to capital. Railway employees must be shown why it is to their interest to do efficient work and why it is contrary to their interest to destroy the earning capacity and stop the expansion of the concerns for which they work. They must be shown why it is not practical to give them more favorable working conditions or higher wages, and why their own situation and those of other working men in these respects could not and would not be improved by the adoption of government ownership or the Plumb plan or other revolutionary policies.

The machinery adopted for bringing about a better understanding and close co-operation between the employees and the railways never has been and never will be so important as the spirit in which the problem is attacked by railway officers. The essence of the matter is "Not of the letter, but of the spirit; for the letter killeth but the spirit giveth life." Most men are governed much more by their sentiments and prejudices than by their reason. No amount of presentation of statistics and arguments will ever solve the problem until more employees have their confidence in the fairness and efficiency of their officers and managements built up until they will again speak proudly of "our railroad." As this is done, however, the facts regarding the railroad business in general and about the business of the railroad for which they work in particular which are or should be presented to them, will become more and more effective in nullifying the reckless anti-railroad propaganda which is being carried on.

The Largest Car Shortage in History

THE CAR SERVICE DIVISION of the American Railway Association reported for the week ended October 15 that the railways were unable to furnish 156,309 freight cars for which shippers had made requisition, and that, on the other hand, there were scattering surpluses of cars in different parts of the country amounting to 4,275. This made a net "car shortage" of 152,034. This is the largest car shortage ever reported. The largest net shortages reported in earlier years were as follows:

On February 6, 1907.....	137,847
On May 1, 1917.....	145,449
On March 1, 1918.....	138,102
On September 1, 1920.....	146,070

There is a prevalent belief that the largest car shortages usually have been reported in the fall or early winter. This is based upon the assumption that the largest amount of freight always is transported in the closing months of the year. The foregoing figures show that the largest car shortages have not always, in the past, developed in the fall or winter. Furthermore, it is not true that within the last five years, at least, the peak of the year's business has always been reached in the fall. In 1917 the largest month's freight business was handled in May; in 1918 in August; in 1919 in October; in 1920 in August, and in 1921 in October.

Unquestionably the general tendency is for the largest freight business to move in the later months of the year, but the time when the largest amount of freight actually has been moved and shortages of cars have come have been determined by whether the tendency of general business has been upward or downward. In 1906 the tendency was one of increasing activity of general business and this tendency caused the freight movement to continue so heavy that the peak of the car shortage in that period was reached in the spring of 1907. Eight months later came the panic of 1907, which caused a heavy decline in freight business. In 1916 the tendency of general business was to increase, and the peak of the car shortage was reached in the spring of 1917. The same tendency of general business prevailed in 1907, while the severe winter of 1917-1918 seriously interfered with the movement of freight. In consequence, the peak of the car shortage was reached in the next spring. The peak of the car shortage in 1919 was reached in October, because late in 1918 and early in 1919 general business activity declined. The largest volume of freight movement and the peak of the car shortage in 1920 were attained in August, because general business activity was at its height and tending to decline, and in the preceding spring the movement of freight had been seriously interfered with by the switchmen's strike. This combination of conditions caused the total freight moved, a large amount of which had accumulated in the spring months, to be the largest in the four months May to August of any four months in history.

Unless most of the present indications are misleading, the tendency of general business is now to increase. There always has occurred in the winter months a decline in the amount of freight moved, even when general business has been extremely active. Undoubtedly this has been mainly due to the fact that the cold and storms of winter have interfered with railway operation and reduced the amount of freight it has been physically possible for the railroads in the northern part of the country to handle, even when general business has been active and growing. The result of this decline in freight movement in the winter months has been, as facts already given show, to increase the car shortage until spring weather has made it possible for the railroads to again increase the amount of freight handled.

What do these facts indicate as to the transportation situation which is likely to prevail this winter and next spring? As there is no sign that the activity of general business is going to decline, the conclusion suggested is that the shortage of cars will reach its peak in the spring of 1923, as it did in the springs of 1907, 1917 and 1918. The railways for the last five weeks have been loading an average of over 970,000 freight cars weekly. After they had been making practically the same record for some weeks in the falls of 1918, 1919 and 1920, the demand for cars declined. Some experts on car service advance the theory that after the railways have been moving almost a million carloads of freight weekly for some weeks the supply of commodities received by the purchasers catches up with their demands, and that therefore after some weeks of such heavy traffic there is likely to be a decline in the demand for transportation. But this conclusion is based only on figures for carloadings for the last three years. Now, the decline in the demand for transportation late in 1918 and early in 1919 undoubtedly was largely due to the termination of the war and to resulting industrial readjustments. The decline in the demand for transportation late in 1919 was brief and was followed by a large increase in the demand for it. The decline in the demand for transportation toward the close of 1920 was due to the fact that for months the country had been heading into a period of drastic liquidation and decline of general business.

It would seem that the present conditions are more similar to those which existed late in 1906, 1916 and 1917, and as

has been shown, the conditions existing then resulted in increases of general business activity, of freight movement, and of car shortage. The United States is a growing country. Its periods of depression always have been followed by periods of revival and expansion of business and by consequent increases in the demands for transportation. The country is in the midst of a period of business revival now. Possibly the demands for transportation will not continue to increase, but certainly there seems more in past experience to indicate that they will than that they will not.

At any rate, nothing can be lost and much may be gained by railways, shippers and consignees acting on the assumption that the demand for transportation is going to increase for some time, and that every effort should be made to provide for meeting this increased demand if it comes. The railways, with unfavorable conditions in the shops of most of them, are pushing repairs of locomotives and cars as fast as they can; but while the number of bad order locomotives and cars is being reduced, it is not declining as rapidly as could be wished. The railways are ordering more new locomotives and cars this year than for some time. These are being received and put in service as rapidly as the builders can turn them out.

If, however, the expansion of general business is to continue it is evident that more must be done to secure the maximum utilization of the transportation facilities now available. While the shortage of cars is the best measure of the existing shortage of transportation, it is merely a symptom of the general transportation situation. Even if the railways should immediately put into service hundreds of thousands of new freight cars, the problem presented would not be solved. It would still be necessary to get more service from the tracks, the terminals and the locomotives.

The best immediately available means of partially solving the present problem is to improve the distribution of cars, to increase the average miles traveled daily by each car and to increase the average load per car. There is an acute shortage of cars for the shipment of grain on the central western and northwestern lines. The Car Service Division is trying to remedy this by ordering an extraordinary movement of box cars to these lines. If the railways act wisely they will fully and promptly carry out these orders, which probably would not have been necessary if car service rules had been strictly observed up to this time. The increased average movement and average loading of cars required cannot be secured without the co-operation of shippers and consignees, and the Car Service Division has called upon them for their help. In a recent bulletin it has shown that at least 150,000 cars are unloaded every day, and that if 24 hours were saved in unloading only one car out of every ten, this would increase the number of cars available for shippers by 15,000. The number of cars available could be increased 30,000 by saving 24 hours in unloading one car out of each five. Shippers are also urged to order only cars that will be loaded within a 24-hour period, and to place orders for reconsignment promptly in order to prevent unnecessary delays to cars that are reconsigned. They are also urged to load cars to the limit of their capacity, and to load and release them with the utmost promptness.

It is always obviously to the interest of the railways themselves in periods such as this to accelerate the movement of cars and increase their loading as much as possible. It is not always so plain to the individual shipper and consignee that it is equally to his interest to co-operate with the railways. Nothing could be plainer, however, than that whatever will increase the average movement and loading of cars will have the effect of increasing the available supply, and that, other things being equal, whatever increases the available supply will increase the amount of freight that every shipper can ship and that every consignee can get shipped to him.

In the efforts to secure the greatest possible amount of service from the facilities already available, the one most important fact which the existing transportation situation emphasizes should never be overlooked. This is that for the first time in its history the country is confronted, at the beginning of a period of business revival, not only with a shortage of transportation but with the most acute shortage that ever existed. There is only one real remedy for this situation, and this is the expansion of railroad facilities. Whether they will be adequately expanded or not will depend upon future government regulation of railways. The public will determine what regulation will be in future. Therefore, whether the existing shortage of transportation will be remedied or become more acute and serious, will be determined by the public.

Net Railway Operating Income

IN AN EDITORIAL which appeared in last week's issue of the *Railway Age* a suggestion was advanced that the monthly reports of the earnings and expenses of the Class I carriers would perhaps have even a greater usefulness than they now have if there were a better understanding of the terms "Net railway operating income" and "Net after rentals." These two terms are synonymous; the chief difficulty in connection with their use lies in a certain amount of confusion between them and such other terms as "Net revenue from railway operations," "Railway operating income," "Net income," etc. In other words there is a lack of understanding as to what different things these various terms mean and a failure to differentiate them properly.

The best way to define the term "Net railway operating income" is to show what the Interstate Commerce Commission requires on the form on which the monthly reports of the carriers are rendered. That form requires the carriers to fill in six figures for each of a total of 29 items. The form—which measures 9½ in. by 11 in.—thus has seven columns which include the figures for the month (a) this year, (b) last year, (c) increase or decrease. Column (d) contains the items and (e) the figures for the cumulative period this year, (f) last year and (g) increase or decrease. The 29 items in column (d) are as follows:

OPERATING REVENUES:*

1. Freight (Accounts 101 and 121).
2. Passenger (Accounts 102 and 122).
3. Mail (Accounts 106 and 125).
4. Express (Accounts 107 and 126).
5. All other transportation.
6. Incidental (Accounts 131 to 143).
7. Joint facility—Cr. (Account 151).
8. Joint facility—Dr. (Account 152).
9. Railway operating revenues (Account 501).

OPERATING EXPENSES:*

10. Maintenance of way and structures (Accounts 201 to 279).
11. Maintenance of equipment (Accounts 301 to 337).
12. Traffic (Accounts 351 to 359).
13. Transportation (Accounts 371 to 420 and 431 to 433).
14. Miscellaneous operations (Accounts 441 to 446).
15. General (Accounts 451 to 462).
16. Transportation for investment—Cr. (General Account VIII).
17. Railway operating expenses (Account 531).

INCOME ITEMS:

18. Net revenue from railway operations (Item 9, less Item 17).
19. Railway tax accruals (Account 532).
20. Uncollectible railway revenues (Account 533).
21. Railway operating income (Item 18, less Items 19 and 20).
22. Equipment rents (Accounts 503 to 507 and 536 to 540), net.†
23. Joint facility rent (Accounts 508 and 541), net.†
24. Net railway operating income (Items 21, 22, and 23).

MILEAGE:

25. Average number of miles of road operated.

OPERATING RATIOS:

26. Ratio of expenses to revenues (Item 17÷Item 9).
27. Ratio of total maintenance to revenues [(Item 10+Item 11)÷Item 9].
28. Ratio of total maintenance to expenses [(Item 10+Item 11)÷Item 17].
29. Sleeping and parlor car surcharge included in Item 2.

* Includes figures for water lines, if any.
† Debit balance should be entered in red.

It will be noted that "Net railway operating income" is item 24 and that what it shows is a "Net after rentals" but before fixed charges. Item 24 is the figure around which the present discussion is based.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Statistical Comparisons Should Consider Business Conditions

NEW HAVEN, Conn.

TO THE EDITOR:

In an article entitled "Suggestions for Greater Efficiency and Economy," on page 702 of the *Railway Age* of October 14, Franklin Snow makes certain suggestions for improving the efficiency and economy of the railroads. His remarks on train dispatching are necessarily read without the information in regard to conditions on the line as a whole which only the dispatcher had at the time. As to the use of official cars and the cost stated—30 cents per car mile—Mr. Snow does not give full consideration of the lesser cost of these movements on trains operating for other purposes, the necessity of traveling offices for officers, the number of which has not increased as rapidly as has transportation. In the matter of passes he neglects the long established considerations of employees, particularly those older in the service. His adverse criticism of 1921 freight operation as compared to 1919, which criticism is apparently based on certain selected unit performance figures, may well be the subject of comment.

His figures for the month of July are quoted below for reference:

	1919	1920	1921
Per cent of cars loaded.....	67.9	71.1	63.6
*Average number tons per car mile.....	27.9	28.2	27.8
Average car miles per car day.....	24.1	24.4	21.3
Net ton-miles per car day.....	455	490	375
Average speed per freight train mile.....	10.8	10.8	11.9
†Gross ton-miles per freight train mile.....	1,571	1,470	1,472
Net ton-miles per freight train mile.....	757	725	674
Per cent of net to gross ton-miles.....	48	49	46
Cost per freight train mile.....	\$1.54	\$1.87	\$1.88
Average per cent locomotives unserviceable.....	27.2	24.2	23.3
Average per cent freight cars unserviceable.....	8.7	6.6	15.9

*Some of the titles are not correct, this one obviously refers to the average ton-miles per loaded car mile.

†The Bureau of Railway Economics summary shows in 1920, 1,512 tons instead of 1,470, and in 1921, 1,459 tons instead of 1,472.

It is common knowledge that the greatest efficiency of any plant is obtained when it is working to 100 per cent capacity and before it is overworked, which in the case of a railroad is when it becomes congested. When business is light and plants work only to part capacity, the performance units always suffer as compared to those accomplished under 100 per cent operation. This point should be borne in mind when comparing July, 1921, with July, 1919, the latter month, according to Mr. Snow, being a normal one, with war traffic replaced by a heavy commercial traffic.

Therefore as the above factors of car use and train performance are influenced by the volume of business offering, no attempt to judge the relative operating efficiency should be made without knowledge concerning the amount of freight business handled during the different periods. Using as a measure the gross ton-miles handled in July of the three years (and net ton-miles would show 1921 at an even greater disadvantage), we find that 1920 was 12 per cent greater than 1919, but that 1921 was 14 per cent less than 1919.

Without taking any credit from the managers for their successful efforts in 1920, it should be realized that the increases in the percentage of loaded car miles and in the tons per loaded car were due in large part to the heavy freight movement at that time. Following federal operation and the

period of heavy traffic, empty car mileage necessarily increased, incidental to the return of cars to owning roads, a movement necessary, moreover, in the interest of car maintenance. When business is heavy every car is required and there is opportunity to load more cars at the point where made empty, except in the cases of specialized equipment, such as coal or stock cars, where but little lading is available for the return movement. These conditions are responsible for the improvement in 1920 and the slump in 1921, rather than any falling off in efficiency.

Car loading is pretty well in the control of the railroads' patrons, so long as they load to the tariff requirements, which is all the railroads can insist upon. Car loading depends somewhat on car supply. When cars are scarce, naturally shippers load the cars they do receive heavier than when there is a car surplusage. Here again, considering the volume of business, 1921 compares favorably with 1919.

What has been said concerning the effect of varying freight movements also applies to the miles per car per day, but there is another important explanation for the decrease in the 1921 figure. That unit, of course, is obtained by dividing the car miles run during the month by the car days of that month. Miles are made only by cars that move, consequently any increases or decreases in the number of cars standing still (bad order and stored cars), affect the average miles per car day. Without entering into a discussion as to the cause of the large number of bad order cars in 1921, whether a result of under maintenance in previous years or, as Mr. Snow suggests, due to a cessation of shop activities in 1921, no criticism can be attached to the managers on that score, bearing in mind the large number of surplus cars available and the slack business of 1921, and the financial situation of the carriers. In 1921 the percentage of bad order freight cars had increased to 15.9 from 8.7 in 1919. If the 1921 percentage had been the same as 1919, the number of bad orders in 1921 would have been 212,000 instead of 375,000, and the average miles per car per day (with the same number of bad orders each year) would have increased from 21.3 to 23.1, or within one mile of the 1919 average. Similar adjustment for surplus cars, 150,000 in July, 1919, and 350,000 in July, 1921, would add another 2.2 miles to the 1921 average or give an adjusted mileage of 25.3 miles per car day, with cars standing (bad orders and surplus) on the same basis as 1919, or a considerably better performance than in 1919. Mr. Snow's remark that "It is indeed poor policy to allow car mileage to fall off as it has," does not appear to be justified.

Nothing need be said of the low figure of 375 net ton-miles per car day. It is simply the product of the three factors previously discussed and when they decrease, it follows.

The statement that the drop in the train load in 1921 is really an economy, because of higher average train speed apparently assumed possible because of the lighter train, and assuming further that the higher speed eliminated a large amount of overtime and other expense, is open to serious doubt. It is by no means an established fact that relatively high freight train speeds mean economy. On the contrary, many railroads have found that their lowest unit costs have resulted when heavy trains were being operated. The average tractive effort of locomotives increases from year to year; it was higher in 1921 than in 1919. Consequently the average locomotive of 1921 should have handled a train of equal tonnage to 1919 at a higher speed or more tonnage at the same speed. Operating men know that the best train loading records are made when there is a strong run of business for the simple reason that when this is true there are ample cars to load locomotives to capacity, while in times of light traffic, such as July, 1921, certain service must be maintained regardless of the train load, consequently many trains leave their terminals with several less cars than they would handle under 100 per cent operation. This argument is somewhat

weakened by the low train load figure shown in Mr. Snow's table for 1920, but as stated the 1,470 tons shown for 1920 is considerably below the figure reported by the Bureau of Railway Economics, while his 1921 figure is higher. While the fact that the gross ton-miles per train hour, which takes into account both load and speed, were higher in 1921, denotes more economical handling—still greater saving would have resulted had the 1,919 train load been handled at the 1921 speed.

The net tons per train were lower in 1921 for reasons previously given, i.e., less loaded cars per train and less tons per loaded car, the same explanation holding for the decreased percentage of net to gross ton-miles.

Everything considered, there seems to be no reason for discouragement so far as freight operation is concerned, and what Mr. Snow terms the temporary spurt of 1920, was really the beginning of improved operation which is continuing, as indicated by the fact that some roads have established new operating records since that time. Of course certain unit figures which necessarily reflect the influence of light business, or at the present time the effects of the coal and shopmen's strikes, will not evidence the improvement. Very likely the railroads will have their troubles during the coming months, but when conditions again become normal, with respect to personnel and business, it is to be expected that our railroads will establish new high marks of operating efficiency.

DON. M. NEISWANGER.

Why Are Dining Cars Unprofitable?

OMAHA, Neb.

TO THE EDITOR:

It is generally known that dining cars are not self-supporting, in fact, in many instances are operated at a loss; that were it not necessary to use them for the purpose of advertising and satisfying patrons, railroads would withdraw most of them.

What is the reason they cannot be made to yield a moderate profit? One view is that some dining car superintendents have fallen into a rut; that is, are too prone to copy menus and methods of some other roads. They cater only to about 15 per cent of their patrons, apparently ignoring the ability to pay and the wants of the other 85 per cent of the 150 passengers on the average train. High prices and small portions are other reasons why the diners are not more liberally patronized; also the tipping abomination, which is more in evidence and seemingly more exacting in dining cars than in any other place.

When a passenger is handed a bill of fare he is at once dismayed and discouraged. True, there is a goodly list of food specialties, but very little offered in the way of real food such as roasts, vegetables and desserts at prices which can be afforded, and which the man who is neither rich nor poor is accustomed to find on his table at home.

A steak costing about 50 cents at home and which is ample for three adults is offered at \$1.25. The result of this exorbitant price is that steaks go a-begging. Many are carried on hand until they become unsalable and are a total loss. A passenger traveling alone often finds it necessary to buy enough, in quantity, to feed two or three persons because of ill-adjusted portions.

Why cannot dining cars be made a paying proposition on a basis of 50 per cent profit on the food served?

It is now the custom to serve club breakfasts at from 50 to 90 cents, but an inspection will show that a combination rarely lists the articles of food that you usually eat, or for which you care. If a selection of certain articles could be made from each combination the result would be more pleasing; but this is not allowed.

Why not make some experiments along the following lines:

Distribute menus throughout the train showing in display type "THIS COMPANY PAYS ITS DINING CAR EMPLOYEES A LIVING WAGE. KINDLY REFRAIN FROM OFFERING TIPS IN ANY FORM WHATEVER."

Show only two prices for breakfast—75 cents and \$1—specifying in each combination one choice of three or more kinds of fruit, cereals, eggs, bacon, ham, rolls, hot cakes, and drinks.

Serve luncheon at the same prices and list in same manner.

Provide six o'clock dinner at \$1.25 and \$1.75, permitting passengers to make one selection from, say four kinds of meat, two selections from the same number of vegetables and supply dessert which is appetizing, instead of the usual "cottage pudding," for which about 35 cents is charged. The average American likes baked potatoes and pie, but these are rarely shown on menus now. Soup and bread are inexpensive and should be served as a matter of course. More attention should be given to the quality of the coffee, which on many diners is very poor indeed and is the one thing above all others desired by the traveler. Unquestionably poor coffee has provoked more criticism than anything else.

Since there is delay in changing, why use table cloths at all? They soon become soiled, must be removed while passengers are at table, and are an unnecessary expense. Also, napkins are fully one-third too large. The expense for table cloths at least could be saved by using a dining table having a soft-toned, mottled, cream-colored top, surrounded by a band about 1½ inches wide—cherry, mahogany or walnut—or a pure white composition closely resembling marble, with slightly turned up edges. Such tables may be seen in many first-class public dining rooms and are quite attractive.

A study of the printed part of bills of fare will show that nearly everything offered is canned; therefore, it would cost nothing additional to continue offering these edibles should it be desired to amplify the menus. For the 15 per cent of patrons who desire to be served with something out of the ordinary, the same specials as now appear could be shown; but these articles should not be featured so prominently that the other 85 per cent of the patrons would be stampeded by the prices, the moment they are seated.

One of the inconsistencies of menus is an offering of ham and eggs for 65 cents, while one must pay about \$1.25 for a steak that should not cost the railroad more than the ham and eggs. Nearly everyone would prefer the steak.

Following is the cost of an average meal as now shown on many cars:

Meat order (not very much nor very good quality).....	\$.80
One vegetable.....	.30
Bread .....	.10
Dessert .....	.35
Pot coffee.....	.15
Tip .....	.20
Total	\$1.90

A dollar and ninety cents for barely enough to satisfy hunger. Often patrons even forego the dessert in order to pay the tip, as it is felt that both cannot be afforded.

Is it any wonder that dining cars are being operated at a loss? Who will be the first to leave the beaten path and offer passengers food worthy of the name, which they have at home, and upon which at least 50 per cent profit can be made?

H. W. F.

L. F. THOMPSON, of Parkersburg, W. Va., is now 99 years old and the Baltimore & Ohio calls attention to the fact that he is "the oldest employee of the oldest railroad" in the United States. He has been retired on pension for the last 22 years. Mr. Thompson was born in 1823, and until 1857, he was a school teacher and tutor in college. Because of failing health, he then went to work as a brakeman and remained in the railroad service the rest of his active life.



Gondola Cars with Slight Modifications Are Well Adapted for Holding Containers

Recent Developments in Use of Container Cars*

Saving in Manual Handling by Container System—Application to Transportation of Milk in Bulk

By F. S. Gallagher

Engineer of Rolling Stock, New York Central

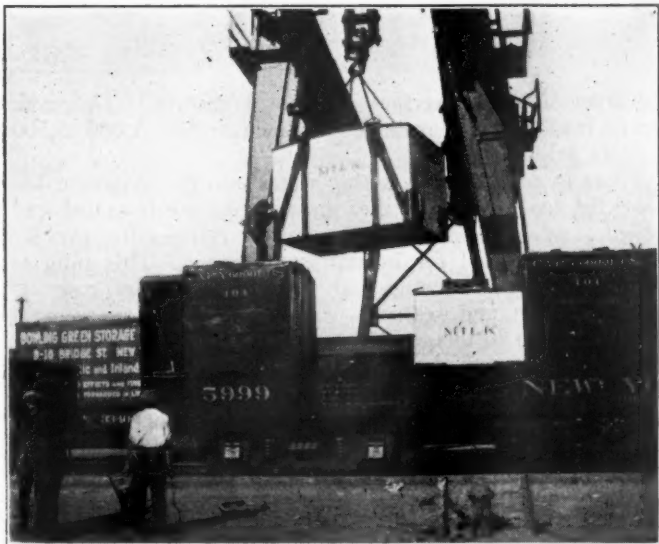
THE CONTAINER SYSTEM of handling L. C. L. freight is too young to enable any definite or concrete figures in connection with costs to be given, but I will endeavor to draw a word picture that will show the economy and

road equipment of the country and the inability of the railroads to control this equipment during the peak load of business, when, in some cases, it is known the shippers use the car as a temporary storage place, tying up equipment that is badly needed. This results in a loss to the railroad company for car revenue which it would have had if the car had been unloaded promptly and returned to service, and an expense to the public at large due to the inability of the railroads to handle promptly shipments because of the lack of equipment.

With the use of the L. C. L. containers, this condition should be greatly reduced, if not altogether eliminated, because the containers can be removed from the car, immediately taken to the shipper's warehouse, and while there might some day be a demurrage charge for holding the containers, it would not keep the rolling stock out of service. In other words, the container methods of handling freight permits the quick unloading, and, of course, the quick unloading permits the quick return to service of the car, and during periods when there is a shortage of cars, which is almost chronic, the quick unloading of the freight car is a benefit to all concerned—the railroads, the shipper and the public.

Thirteen Manual Handlings for Each L. C. L. Shipment

Few people realize the number of times that L. C. L. freight must be handled from the shipper to the consignee. Following one package from start to destination, we will find it is manually handled as follows: (First) From the picking room to the warehouse platform; (second) from the warehouse platform to the wagon by hand truck; (third) from the hand truck into the wagon. The wagon then proceeds to the freight house, and the next manual handling (fourth) is from the wagon to the freight house platform; (fifth) from the freight house platform to the hand truck. The



Loading a 600 Gal. Milk Tank Container

safety effected through the handling of less than car load freight by the container system.

The L. C. L. method of handling less than car load freight, permitting the unloading of a car in a few minutes, will be very far reaching, taking into consideration the rail-

*Address delivered before the Society of Terminal Engineers, New York, October 10, 1922.

individual package must be weighed and proper record made, and then taken into the car (making the sixth movement). The seventh handling would be the stowing into the car. The car is then sealed and moved to destination.

The next handling (eighth) is the unloader lifting the freight to the floor of the car for the hand truck; (ninth) the hand truck carries this freight to a designated place in the freight house. When the consignee calls for the goods the hand truck takes the shipment to the wagon for loading (tenth handling). When the package is delivered by the hand truck to the wagon loading platform, it is dumped at the tail gate of the wagon (eleventh handling), and must be handled the twelfth time to place it into the wagon. At the consignee's receiving platform the goods must be unloaded from the wagon, making the thirteenth time that this package has been handled.

Assuming that a car load of L. C. L. freight is 20,000 lb., this means that it must be handled manually lifted 13 times, or man power must be provided to lift 260,000 lb. in order to transfer one car load of 20,000 lb. of freight. This does not include the numerous checkings and records that must be made of this freight, which in itself is a big item of expense. By the container system the container is delivered to the shipper, who will have a light overhead crane or some other means of carrying the container into his warehouse, so that one handling of the original package into the container is all that is necessary. The expense of crating is eliminated. Being loaded with one handling of the freight, the container is lifted by hoist from the floor of the shipper's warehouse to the truck and is lifted by hoist from the truck to the car.

At destination, the operation is just the opposite. The container is lifted from the car onto the truck and then from truck to the consignee's platform, where it is unloaded and is ready for return shipment, or the container is ready to be picked up by the truck for the use of some other shipper. While the container is being unloaded the truck is released.

Instead of having to handle this container shipment of L. C. L. freight thirteen times by man power, it is handled twice, saving on the same basis as before; that is, on a car load of L. C. L. freight weighing 20,000 lb., the man power lifting of 220,000 lb. This is an economy that we cannot lose sight of, and while it would be said, of course, that there will be an expense incident to the installation of equipment for handling these containers at the various shippers' and consignees' plants, when this equipment is once in, the expense ceases.

Saving on Loss and Damage

We are all familiar with the enormous amount of money returned to the shippers by the railroads and by the express companies on account of loss and damage to freight. In L. C. L. freight it amounts to more than 8½ per cent of the revenue. The express companies pay claims to the amount of \$25,000,000 a year for loss and damage. A great portion of this can be saved by the container system, because there is no chance of damage if the goods are properly packed in the container unless there is a disastrous smash-up, and no chance of loss en route from the shipper's platform to the consignee's platform, because it is impossible.

Containers for Shipping Liquids

There are other commodities handled by the railroads beside L. C. L. freight, express and mail where the container should play a big part; that is, in the handling of liquids, especially milk, fruit juices, edible oils, acids, etc., where the temperature is an important factor. The New York Central now has containers arranged for the transportation of milk in bulk.

The container and tank for milk or other liquids is shown in Fig 1. A glass lined tank built by the Pfaudler Com-

pany of Rochester, N. Y., is used, but is encased in an insulated container. Time saving and labor saving is accomplished in every operation of handling milk or liquid by the use of the container car tank. The liquid being placed in the tanks at the proper temperature and the container being properly insulated, eliminates the use of ice.

These tanks may be made as large as may be transferred over the highways. In actual service all of the containers from the car will be hoisted and placed on a motor truck regularly in about a minute or a minute and a half per container. To transfer the same amount of milk between truck and railway car in the standard ten-gallon cans would require over two hours in manual labor. The cleaning of one of the large containers could be accomplished within five minutes, while it would require fully an hour to clean 60 cans required to carry 600 gallons of milk. Platforms requiring extensive space for handling the ten-gallon milk can will be done away with.

Any milk station shipping 600 gallons or more, or multiples of any designated size of tank, could utilize the container car tank service and lessen the handling at the shipping point and at the receiving point. The limiting feature of a liquid container would simply mean the capacity of

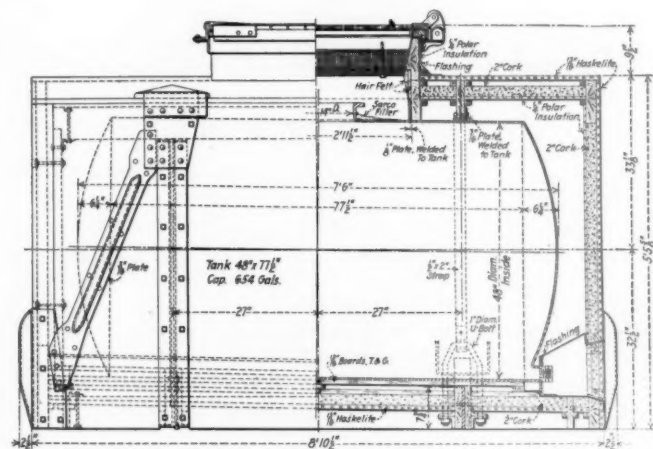


Fig. 1—Container and Tank for Milk

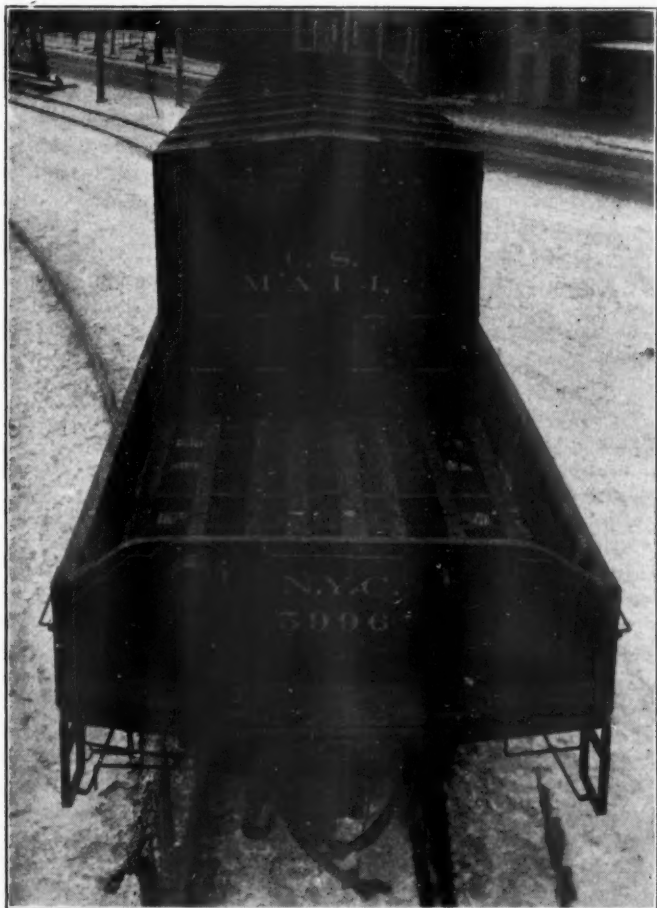
the truck for transferring over the highways. The tank can be made to carry in bulk any amount: 600, 1,000, 1,500 or more gallons of milk.

There is no chance of getting water into the container, because the top of the Pfaudler glass-lined tank is sealed and locked, and in addition a regulation refrigerator car ice hatch plug is used for insulating purposes. This plug is dropped into the opening and then the container cover is fastened down and sealed.

With regard to the actual handling of L. C. L. freight by the container method, a tariff was arranged for between Chicago and Cleveland, and the container system of handling freight put into regular service. The containers were handled as I described, thus making a store door delivery, or in proper words, from store door to store door delivery. This system of handling L. C. L. freight is now in operation between New York and Buffalo and intermediate points, where the "from store door to store door" handling of L. C. L. freight is made possible, and all the equipment that is necessary to put this system in operation is the crane for lifting the container from the car, and at the shipping or consignee's plant the container can be left on the truck and unloaded, but if they have lifting means it would be quicker and cheaper to lift the container from the truck and place it on the shipping or receiving platform, releasing the truck for other work while the container is being loaded or unloaded, as the case may be.

These containers are 7 ft. wide, 9 ft. long and 8 ft. high, and they have a carrying capacity of 7,000 lb. This keeps the gross weight within the carrying capacity of a five-ton truck. They are made of steel throughout, except the floor, which is made of laminated wood. The containers are well braced, and there is very little chance of damage with ordinary handling.

By the container system, when we can arrange for the proper equipment for handling the containers, a car can be



Container Cars for Mail Service Have a Wire-Mesh Floor

unloaded and released for service in a very few minutes; also it will permit the shipper and consignee to transfer or haul their goods from their warehouse or to their warehouse, as the case may be, by auto truck, without waiting at the freight house and without the loss of time necessary to load the truck with individual packages, because it will take only about a minute to load the truck when goods are shipped in an L. C. L. container, thereby saving an hour or two in getting the goods from or to the railroad.

THE LAST WOODEN DINING CAR on the Pennsylvania Railroad has been replaced by a modern steel car. The new cars, when fully equipped, represent an investment of \$38,000 each. If all the Pennsylvania dining cars were in operation simultaneously, 4,236 people could be served at one sitting. This company serves 3,575,500 meals annually, requiring a total force of 1,555 employees. The meals are prepared in kitchens having a floor space of 19 ft. 6 in. long and 2 ft. 6 in. wide, where a chef and three assistants prepare and cook 10,000 meals a day. Approximately 2,600,000 eggs are required every year to feed the dining patrons; also 1,500,000 lb. of fresh meat, 1,300,000 lb. of potatoes, 500,000 lb. of sugar, 5,000,000 rolls, 150,000 lb. coffee and 500,000 quarts of milk and cream.

Automatic Highway Crossing Signals Authorized in Place of Gates

AT NEWFIELDS, N. H., on the Boston & Maine, the Public Service Commission of New Hampshire has authorized the railroad company to install, at a crossing 300 ft. south of the station, an "automatic wig-wag flasher and bell warning" signal for the protection of wayfarers at the crossing, in place of gates, which gates, with an attendant 12 hours a day, have been in use 50 years; and this order is issued notwithstanding protests received from the citizens.

When the railroad company announced its intention, the selectmen of the town and, later, 118 citizens, entered a protest, and the commission held a hearing on October 2. Newfields is a town of about 500 inhabitants. It is on the main line between Boston and Portland, where the number of trains is large; but the highway travel is not heavy, consisting mostly of the people who live on the east side of the railroad, on their trips to and from the trading center of the village, which is on the west side.

The commission in its report discusses quite fully the question of reasonable protection, and decides that an audible and visual warning, in service 24 hours a day, properly maintained, is better than the present arrangement, the gates being unattended for 12 hours of the 24. The "automatic flagman" is on duty 24 hours and never forgets. "It has met with universal approval by all regulatory bodies and is fast displacing the gate and human flagman," says the report. The visual apparatus and the audible are each operated by separate batteries and the railroad company reports that, in its experience, there has been no case where both of these warnings at a crossing have failed simultaneously. The



Visual and Audible Signal at Oak Hill, Maine

signal will be inspected daily; and, being near the station, failure to operate will be soon detected. As the view at the crossing is short, the road proposes to install two signals, one on each side of the railroad.

The report of the commissioners, signed by William T. Gunnison, chairman, reminds the public that the duties of the traveler and of the railroad at a crossing are reciprocal; the traveler must exercise due care, the same as must the railroad; and "whichever party fails in the performance of this reciprocal duty is liable for injury done to the innocent party."

The signal to be installed at Newfields is like that shown in the illustration, which is in service on the same railroad at Oak Hill near Portland. As shown, the signal is out of order as indicated by the appearance of the word stop. Normally, when a train is on the track circuit approaching

the crossing, the stop disk swings back and forth, a bell rings and the six red lights at the top flash, successively, thus making three appeals to the attention of travelers on the highway. When no train is approaching the stop disk is normally hidden behind the case bearing the Look and Listen Sign, the bell is silent and the six red lights are dead.

University of Michigan Establishes Department of Transportation

ANNOUNCEMENT was made last week that on October 27, the Board of Regents of the University of Michigan had established in its School of Engineering a new department of transportation intended to cover what may briefly be termed the broader aspects of that subject in its various branches. John S. Worley, a prominent consulting engineer of New York City has been appointed to head the department with the title of Professor of Transportation and Railroad Engineering.

Although the new department is to be identified with the School of Engineering, it is not the university's intention that the courses to be given will emphasize the engineering angle alone. They are intended to be open to students in the academic departments as well as those in the engineering school and through the co-operation of the various engineering departments and others, such, for instance, as that of economics it is expected that the treatment of the subject will be such that the courses will be of value to students interested in public utility and transportation matters generally.

The Board of Regents of the University of Michigan have in mind the development of work in transportation beyond anything that has been done in the past through an ordinary professorship in railroad engineering. While it is expected that work will be given in courses in railway engineering and that a number of the best young men may be induced to enter railway service each year, yet it is believed that the university has a much more important office in the creation of a right public sentiment towards the railroads and a more complete recognition on the part of the people of the complete dependence of the United States on the various agencies of transportation. Similarly, the prospective worker in public utility work will be led to see, it is intended, the reciprocal character of this situation, so that he may be able to formulate a proper understanding of the attitude of the public and to realize the utility's obligations in its community.

The relationship that will have to be developed between the railways, the waterways and the growing traffic on the highways is a matter that calls for most intelligent study and for the full co-operation of the railways and the colleges. One of the first elements in the program which is now in more or less tentative stages is, therefore, that of co-ordination. In the School of Engineering, at present, for instance, there are departments dealing with highways, naval architecture or water transport, steam and electric railways and

beginnings have been made with a new department dealing with aviation. The department of transportation will have as one of its first aims an analysis and study of the co-ordination of these various modes of transport so that a man specializing in one of these subjects may be able to understand the problems of the others and secure an adequate picture of the existing and possible relationships of the one to the other. Similarly it is intended to cover the subject in such a manner that there may also be encouraged a proper understanding of the various related economic, legal and engineering aspects of the subject so that the student will have a broader understanding of the transportation situation as a whole.

Plans as to the curriculum are as yet not completely formulated. It is the university's idea in the beginning to have as a part of the new work, a course in the history of transportation, as it is believed that this will permit the desired understanding of the relationships of the various modes, as already mentioned, or to put it in other words, it is believed that a course of this kind will enable the student to regard each kind of transportation in its proper economic place. It is later intended to deal with the public utility problem as such, the idea being to give those not necessarily intending to take up that work in later life a better understanding of public utility activities and those actually intending to enter public utility work—such as engineering students trained in the technique of the subject—a better understanding of the broader aspects of the work which they are taking up.

John Stephen Worley, who has been appointed to the new chair of Professor of Transportation and Railroad Engineering is a man of wide experience in railway and public utility work. He was born in Jackson County, Mo., April 19, 1876 and received his education at Odessa (Mo.) College and at the University of Kansas, receiving his M.S. degree from the latter in 1904. In 1900 he entered railway service as an assistant engineer for the Kansas City, Mexico & Orient; was later assistant engineer of construction of the Arkansas & Choctaw, a Frisco subsidiary; from 1901 to 1905, assistant engineer of construction and assistant chief engineer of the St. Louis & North Arkansas and in 1905, engineer in charge of construction of the Toledo, Urban & Interurban. From 1904 to 1908 he was associated with Riggs & Sherman, consulting engineers at Toledo, Ohio, in the capacity of principal assistant engineer of design and construction. In 1908, with H. E. Riggs and M. W. Thompson, he participated in the Central of Georgia income bond case having charge of engineering work which included examination of the accounts and certain valuations. From 1909 to 1914 he was connected with the firm of Worley & Black, consulting engineers at Kansas City, Mo. and engaged in the design and construction of waterworks and water purifications, light and power plants and sewerage and sewerage purification plants in a considerable number of cities in Kansas. At this same time he was also retained in consulting work on various other public utility work such as electric railway construction, preparation of reports on steam railroad properties, etc. On May 1, 1913, he was named a member of the engineering board of the Division of Valuation of the Interstate Commerce Commission and was in direct charge of the Western district. From January 1, 1920, to July, 1921, he was retained as consulting engineer of the Bureau of Valuation. Since January, 1920, Mr. Worley has been the junior partner of the firm of Thompson & Worley, financial accountants and engineers with headquarters in New York. From June, 1921, to November, 1921, he was a director, comptroller and special representative of the creditors of the Habirshaw Electric Cable Company, Inc., New York, and since November, 1921, he has been receiver of the properties of the company.



J. S. Worley

Labor Board Again Rejects Living Wage Theory

Shopmen's Strike Called "Egregious Blunder" in Formal Decision
in M. of W. Wage Dispute

THE THEORY of the "living wage" as advanced by representatives of railroad employees before the Railroad Labor Board "if carried to its legitimate conclusion would wreck every railroad in the United States and, if extended to other industries, would carry them into communistic ruin." This is the manner in which the majority of the members of the Labor Board, including all of the public representatives, present more or less of a final answer to this moot question. The quotation is from a supporting opinion attached to the board's formal decision on the plea of maintenance of way employees for a wage increase. The actual decision of the board in this case was quoted in the *Railway Age* of October 21, page 741. The complete ruling of the board was subsequently held up in order to include a dissenting opinion filed by A. O. Wharton, a member of the labor group on the board; a short statement by W. L. McMenimen, another member of the labor group, and a supporting opinion which, in addition to replying to Mr. Wharton's argument, contains what may be considered more or less of a final word on the part of the majority on the principle of the "living wage" as advanced by the labor organization economists.

The plea of the maintenance of way employees for an increase in wages was based upon (1) a reconsideration of the evidence presented in the hearings which resulted in the wage reduction order for these employees last July and (2) the contention that changes in industrial conditions since March, when this evidence was presented to the board, justify an increase. The board denies in the formal decision the first contention of the employees, "a majority of the board being of the opinion that the previous decision was just and reasonable." Referring to the second contention put forward by the men, the board recognizes a sharp upturn of industrial wages beginning in April of this year and affecting particularly common labor. The board cited that, whereas during the period from February 15 to March 15 there were no increases in other industries and 35 cases of wage reductions reported by the National Industrial Conference Board, during the period from August 15 to September 15 there were 119 increases and only four wage cuts reported.

Referring to the minimum wage of 25 cents an hour, which has been used extensively by labor leaders in the propaganda, the board said:

"The minimum of 25 cents an hour will prevail in very restricted territory and applies comparatively to a very small number of men. As a matter of fact, this 25 cent minimum is a higher wage than the 37 cent minimum when considered in relation to the living conditions of the respective territories."

In support of this contention, the board cited the fact that whereas the New York, New Haven & Hartford is paying 40 cents an hour to trackmen, several of the larger southern roads are by agreement with their men paying between 17½ and 22 cents an hour at the present time.

"Living Wage" Is Primary Consideration; Cost of Living and Competitive Wages Secondary

Mr. Wharton in his dissenting opinion reiterates the argument he made on this same question in the board's previous decision reducing the rates of pay of maintenance of way employees. His arguments at that time were abstracted in the *Railway Age* of June 3, page 1280.

"The specific and fundamental mandate of the law is that wages shall be just and reasonable," Mr. Wharton says in addition. "The relation of rates of pay to those established in private industry, or the relation of rates of pay to the cost of living, is a *secondary* consideration which does not come into play until the *primary* requirement of a 'just and reasonable' or an adequate or living wage has been satisfied."

From this premise Mr. Wharton argues that a "living wage" must be fixed for those at the bottom of the wage structure and "just and reasonable differentials above this basic wage be established for the other classes of railway employees in accordance with the seven relevant circumstances mentioned in section 307 of the Transportation Act."

In support of his contention that the "living wage" is legally sound, Mr. Wharton quotes at length from statements by Senator Albert B. Cummins and from the rulings of several arbitration bodies, including the Kansas Court of Industrial Relations and the National War Labor Board.

Mr. Wharton Again Defends Budgetary Method of Determining "Living Wage"

The use of a family budget is essential to any attempt at ascertaining practically what a "living wage" should be, Mr. Wharton contends, and follows with a lengthy argument, the gist of which is contained in his statement that "a tribunal such as the Railroad Labor Board, in attempting to give practical application to the 'living wage' principle, cannot rely on what is, but must find out what should be."

In this connection Mr. Wharton also analyzes at length the objections which have been raised to the budgetary method of determining what a "living wage" consists of, his contention being that none of the objects raised are insurmountable and "all can be overcome by the exercise of sound judgment and discretion by the board." That the application of the living wage principle by the budgetary method would be financially impossible, or would involve such a financial outlay as would constitute a grievous burden to the shipper and the consumer, is denied by Mr. Wharton on the grounds that "similar arguments and prophecies have been developed in the past against the establishment of the eight-hour day and other measures of industrial equity or amelioration" and that the "dire results which have been predicted have never materialized."

Mr. McMenimen also appended a short statement to the effect that, although he does not feel that the increases awarded in this decision are sufficient, he voted for the proposition "when it appeared that the long delay in reaching a decision was working to the detriment of the men affected." The board's delay in arriving at a decision had already meant a loss to the employees involved of about \$1,000,000 in earnings, he says, and justifies his vote on the grounds of expediency.

Labor Board Has Already Granted Railway Employees a "Living Wage"

The supporting opinion attached by the majority of the board says in part:

The fundamental difference between this decision and the dissenting opinion is that the former is based upon the Transportation Act, and the latter upon a fantastic theory, the very essence of which its own proponents expressly characterized in the hearing before the board as a "guess and a makeshift." The theory of the dissenting opinion, if carried to its legitimate conclusion, would

wreck every railroad in the United States and, if extended to other industries, would carry them into communistic ruin.

The contention of the expert economists for the employees was that the board should fix for common labor "the living wage." This is likewise the basis of the dissenting opinion. If the contentions were that the board should establish "a living wage," the majority would readily accede to the proposition, and, as a matter of fact, the board in this instance, as in all others, has granted a living wage. But the abstract, elusive thing called "the living wage," based upon a makeshift and a guess, can not receive the sanction of the board, because it would be utterly impractical and would not be "just and reasonable," as the law commands.

The living wage is defined by its proponents before this board as follows: A wage which will support a family of five in health and reasonable comfort, such family being assumed to consist of a husband and wife and three dependent children under 16 years of age.

This constitutes a bit of mellifluous phraseology, well calculated to deceive the unthinking. It has frequently been demonstrated that a melodious slogan contains more possibilities of danger and destruction than a dynamite bomb.

To ascertain what is reasonable comfort, it is proposed that experts shall prescribe a standard of living for a family of five, setting out in minute detail what the experts think such a family should have in food, clothing, furniture, housing and all the other necessities of life. The fallacy of this proposal is inherent and fundamental. That it would be wise and practical to undertake to establish an arbitrary standard of living for several millions of people is not apparent. That the desires and requirements of all men are equal and alike is not correct, and that any committee of experts could set up an average living standard upon which a wage scale could be practically based has not been demonstrated anywhere. If theorists should evolve such a standard of living, it would not be possible to obtain any general conformance to it by those for whom it was designed. Standards of living have never been theorized into men. A man cannot be picked up by the scruff of the neck and hoisted into a new standard of living. Such a change in the individual man is a matter of growth and development. When brought about by natural processes, it is socially and economically beneficial, but, if attempted by legislation, it is a wasteful absurdity. To provide a somewhat expensive standard of living for a man who by habits, training and ambition is not prepared for it, wastes money and confers no real benefit on the individual.

It may well be observed that this theory of standardization necessarily fails to take into account many of the economies that are practiced by thrifty people who desire to get ahead in the game of life.

That standards of living are gradually improving in this country is undoubtedly true, and this is as it should be. There is no member of the board who does not profoundly desire improved living conditions for common labor, but it is our belief that this movement must be continued along the lines indicated by human experience and that it cannot be consummated in the twinkling of an eye by artificial expedients. As a matter of fact, the expert representative of the employees in this case, admitted that the immediate establishment of "the living wage" would, to adopt his language, "throw a monkey wrench into the industrial machinery." He therefore suggested that the board only make a start in that direction at this time. Such a proposition is entirely illogical. If the living wage is the just and reasonable wage authorized by the statute, it is the duty of the board to establish it now. If it is not the just and reasonable wage commanded by the law, then it is not the duty of the board to adopt it now or hereafter, unless the law be changed.

If it would now be equivalent to a monkey wrench thrown into the machinery, as its advocate says, it might amount to the same thing later on, and the board made no mistake in declining to commit itself to this theory.

The adoption of the family of five as the typical family is "arbitrary and questionable," the opinion continues. The facts that the typical family has, according to the 1920 census, 4.4 persons, that there is an average of 1.4 dependent children to a family and not five, and that for each family there are 1.36 male workers instead of one, are cited by the majority.

The opinion further shows the effect of the application of the "living wage" in the railroad industry by pointing out that the establishment of a 72 cent minimum rate with the existing differentials would add \$3,112,952,387 to the annual payroll and would result in an annual deficit of \$2,241,639,518. Even if the 48 cent minimum rate were to be applied, as the representatives of the employees requested,

the result would be an annual deficit of \$378,078,125, the majority show, adding:

In either instance, there would not be a cent of returns for stockholders. Of course, for those who desire government ownership this would be a quick method of getting it, for it is a sure thing that the public would not stand for the imposition of higher rates to pay such a deficit.

It must be remembered, in the last analysis of the matter, that the public would have to pay this wage bill, and when we say the public, everybody, rich and poor, is included. A vast percentage of the burden would be passed on to laboring men and women in other lines of industry in the form of increased living expenses. From the effort to meet such increased expenses there would necessarily result a wide extension of the struggle to raise wages in all other lines of industry, and the disturbance and disorganization of business in general.

It is our belief that the people of this country are perfectly willing that railway labor, with its hazard, skill and responsibility, should be well compensated, even to the point of liberality. In view of this friendly public sentiment, it is not wise for labor organizations to seek to impose upon the farmers and producers of the country a crushing burden at a time when the losses of readjustment are so keenly remembered.

The citation by Mr. Wharton of an editorial written by Wm. R. Hearst and containing the statement that "the unjustifiable lowering of the shopmen's wages caused the strike" brings from the majority on the board the following interesting comment on the strike and its justifiableness:

In the judgment of a majority of the board, and, we believe, of a great majority of the people, the shopmen's strike was an egregious blunder without any real justification, and this is said with the kindest feeling for the employees who have suffered most from its effects. It has wrought harm to all and good to none. It has burdened the railways with an unjust expense, has inflicted great losses upon the public, especially the food producers, and has resulted in approximately \$177,535,524 loss to the strikers. For all this, the men on strike have won nothing. They have gained no concession as to any matter upon which they struck. For months the strike has been merely a struggle upon the part of the men to regain their positions.

In vivid contrast stands the course of the maintenance of way employees, whose officials wisely prevented a strike. Since July 1 this class of employees has received in wages approximately \$147,656,866, which would have been lost on strike, and now, by orderly and legal processes, they are receiving under the present decision an increase in wages approximating \$20,000,000 per year.

Perhaps there is no better time and place to emphasize the belief of a majority of the board that railway strikes are utterly useless and wasteful, and that the employees will always gain better results at the hands of any tribunal fairly constituted and representative of the people than they will by making war on the carriers and the public.

The most disturbing influence prevalent in railway operation today is the continuous preachment that the laboring man can not trust the courts and tribunals of his country and must therefore resort to force for the attainment of justice.

Nothing here said should be construed as an effort to discourage the legitimate activities of organized labor. It serves an essential purpose in the body politic. The conduct of the maintenance of way organization in connection with this wage controversy exemplifies the exalted service that may be rendered to labor and to our Republic by statesmanlike leadership of the railway employees.

THE CAREFUL CROSSING CAMPAIGN, so far as can be judged by the experiences of the four months on the Baltimore & Ohio, was a gratifying success and a statement issued by the road says that if the Baltimore & Ohio's average of reduction of casualties is maintained on all the railroads, the expense of the drive will have been well spent. Actual collisions between trains and automobiles were reduced 13 per cent, as compared with the same four months last year. There was a reduction of 17 per cent in all kinds of accidents at crossings, including those to pedestrians, automobiles, other vehicles, etc. The reduction in persons killed in crossing accidents of all kinds amounted to 41 per cent; 37 fatalities last year, 22 this year. The reduction in injuries amounted to 9 per cent. There were 37 accidents due to the absolute disregard of gates or the fact that a train already was on the crossing. There seems to be little chance at all of saving drivers of this kind.

The Use of Mechanical Devices in the Treasury Department*

By F. L. Paetzold

Secretary and Treasurer, Great Northern.

THIS paper will outline some of the mechanical devices and methods used in the secretary and treasury department of the Great Northern.

Record of Stockholders and Payment of Dividends.—The original stockholders' record, transfers of stock and the payment of dividends are handled from our New York office, but the Great Northern, being a Minnesota corporation, is required under the Minnesota law to keep a record of its stockholders in Minnesota. The New York office sends us at St. Paul at the close of each day transfer sheets showing all transfers of stock which are posted and the stockholders' record is thus kept up to date.

We have about 45,000 stockholders and until recently the St. Paul record of stockholders was kept in approximately 45 large, heavy, clumsy, loose-leaf books, which were moved about on a truck. It took two strong men to wheel the truck into the vault at night, and the books were so large and heavy that it was difficult for the clerks to handle them when posting. The work was becoming so heavy that an additional clerk would have been necessary under the old system, but by discarding the loose-leaf books and installing a Library Bureau card system, using cards 8 in. by 5 in., housed in two small, steel trucks, each made up of a truck base, with three five-tray sections, a top and a truck handle, the need for an additional clerk was eliminated. During the day one truck is kept on each side of a flat top desk so that the operator sitting at a desk has within reach any and all of the 50,000 cards. At night these two small trucks can easily be rolled into the vault. A great saving in time has been made by the new card system as the filing index is exceedingly good.

We use an addressograph machine in connection with the stockholders' record. A stencil is cut of each new stockholder's name and address, and the stencils kept up to date as to changes of address so that when dividend payments are made it is an easy matter to run off a set of envelopes or dividend checks if the window envelope is used. The addressograph is also used in connection with sending out proxies for the annual meeting of stockholders. The name of each stockholder is printed on the proxy so when it is returned signed it is easy to sort and check. Those who have had experience with a large number of stockholders' proxies will appreciate how extremely difficult it is properly to decipher the names from the signatures.

Signograph Machines.—We have two ten-pen signograph machines manufactured by the Signograph Company, New York, one machine at New York, which is used in connection with dividend checks, and one at St. Paul, which is used in signing pay-checks. This permits the signing of 10 checks at a time, two sheets of checks, five checks to the sheet.

Electric Cancelling Machine.—An electric cancelling machine manufactured by the American Perforator Company, Chicago, is installed in the treasurer's office, which is used in cancelling all paid drafts, checks, agents' and conductors' remittance slips, etc., which perforates the date the item passed through the office. The perforation serves two purposes—it cancels the item and shows on its face the date the item was recorded in the treasurer's office.

Perforating Machine Used on Postage Stamps.—All postage stamps for the system are handled by the treasurer on requisitions and all stamps are perforated with the initials "G. N." before being sent out. The machine used is manufactured by the B. F. Cummins Company, Chicago.

Check Writers and Protecting Machines.—In the paymaster's office two electric F. & E. check writing machines are used in the preparation of pay-checks. With the use of these machines the amount of the check is written in and perforated for protection by one operation.

Hand operated check writing machines manufactured by the Todd Protectograph Company of Rochester, N. Y., are used in the treasurer's office for ordinary checks, writing in the amounts and protecting them with one operation.

Adding Machines.—The adding machine is so necessary to the work of the treasurer that it hardly needs mention for no treasurer today could get along without it. All our items, such as drafts, pay-checks, time checks, agents' and conductors' remittance slips, etc., after being proven are listed on statements in duplicate, the original going to the comptroller with the daily cash statement, the duplicate being retained. This saves a great deal of bookkeeping for the cash book merely shows the total paid or received, the details being found on the duplicate statement prepared on the adding machine which is filed in a separate binder. Burroughs machines are used exclusively.

Loose-Leaf Cash Book.—It might be of interest to call attention to the form of loose-leaf cash book used. We have one book for the disbursements and one book for the receipts so that when the work is heavy, one bookkeeper can handle the receipts and the other the payments. As a matter of policy we have banking arrangements in all large cities on the system, and on account of the number of banks, the balancing of the daily work was difficult until our present system was worked out. In our loose-leaf cash receipt form and cash payment form after allowing two columns for the explanation of the item, we have a column for each bank, the name of the bank being placed at the top of the column.

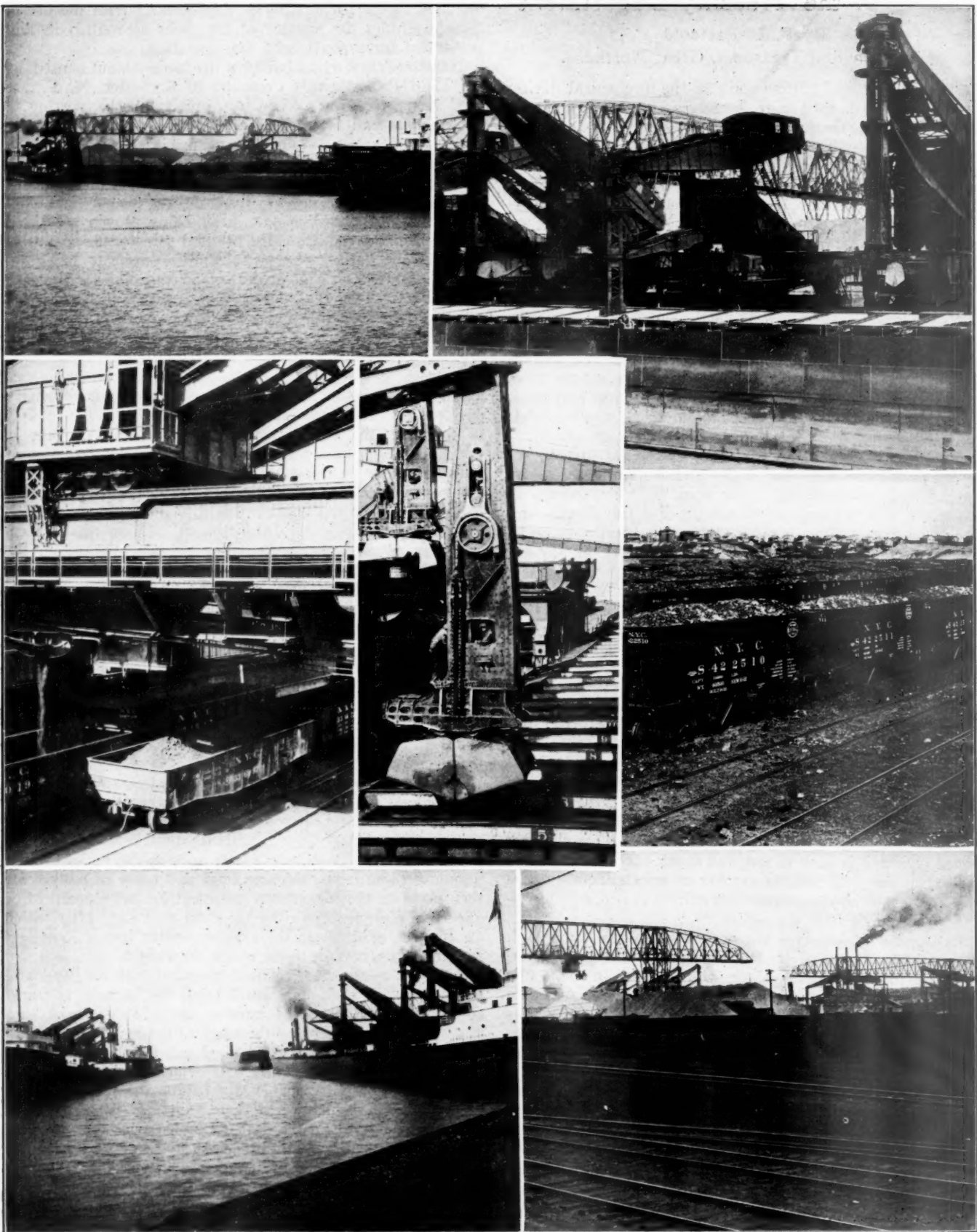
The items credited or charged against each bank each day are entered in the column for the proper bank. At the end of the day after the receipts and disbursements of each bank have been totaled, the total disbursements for each bank are transferred and placed under the total receipts for each bank and the differences brought down to show the balance in each bank at the close of the day. By this method, if the books are not in balance we can quickly locate in which bank the discrepancy is to be found.

The banks report to us daily on a statement which we furnish. When these statements are received each day by express, one clerk proves and checks the items sent in for credit or debit and then distributes the agents' remittance slips, pay-checks, vouchers, drafts, etc., to the various clerks handling those items, showing total and name of bank. He then notes on the face of the statement the net amount to be added or deducted from the bank for that day, after which an entry is made from the cash statement into a loose-leaf running bank balance book which we keep.

In order to show at a glance the total cash on hand and the balance in each individual bank the balance is transferred from the loose-leaf running bank balance book to a daily cash book which has the name of the bank in a column at the left and the balance in a column for each day of the month in succeeding columns. If after balancing the day's work there is any discrepancy, the balances shown at the end of the day on the loose-leaf cash book are checked against the balances shown in the daily bank balance book to ascertain in which bank the difference occurred. Every treasurer realizes the importance of balancing his accounts daily in the shortest possible time in order to settle with the bank and furnish a daily cash statement to the comptroller, and while our method may not be the most practical on other roads, we have found that by this method errors can be quickly detected and the bookkeeping handled most efficiently.

Recording Minutes.—We use an Elliott Fisher machine for writing minutes of meetings into permanent bound minute books, which makes a neat, permanent record.

*A paper read at the Railway Treasury Officers meeting held at Asheville, N. C., October 19 and 20.



A Variety of Views of the Coal and Ore Handling Equipment at the Ashtabula Docks of the New York Central Lines, Where Lake Coal Is Being Transshipped at a Record Rate for That Road. For a Period of 32 Days Coal Has Been Dumped at the Average Rate of a Car Every Three Minutes



A 90-Car Coal Train Headed for Ashtabula

New York Central Handles Coal at Record Rate

End of Five Months of Mining Inactivity Results in Heavy
Tonnage Movement at Ashtabula, Ohio

AS A RESULT OF the coal strike and the mining inactivity, which lasted for about five months, many of the railroads were faced with the problem of getting to destinations in three and two-thirds months "lake" coal in a quantity which they would ordinarily have nearly nine months to handle. This has brought about a very heavy coal movement in the neighborhood of the lake ports, necessitating the use of every facility. It is, therefore, interesting and timely to see what is being accomplished by the New York Central at Ashtabula where new records for this road have been made in the transshipment of lake coal.

Central Handles About 16 Per Cent of Northwest Coal Shipments

Of the 25,000,000 tons of bituminous coal sent annually to the northwest, approximately 4,000,000 tons, or 16 per cent, is hauled to the lake by and transferred to lake steamers at the docks of the New York Central Lines at Ashtabula Harbor and Toledo, Ohio, the facilities at the latter point being on the Toledo & Ohio Central. Between September 10, when coal first began to reach Ashtabula after the resumption of mining, and October 18 this year, that port saw the largest bulk of coal traffic passing through it which the records have ever shown for such a period. During that time 765,405 tons, all bituminous, in 14,559 cars were transshipped. In the 32 working days between the dates mentioned a daily average of 456 cars of coal loaded into vessels was attained. This means that 19 cars were unloaded per hour, or an average of one about every three minutes for a 24-hour day. The actual operation, however, of dumping a car consumes about a minute.

Tonnage for the Current Year Far in Excess of Previous Years

The work of the harbor docks in handling this tonnage since resumption of mining is also brought to mind more clearly by a comparison of business handled in similar periods of previous years. The figure of 765,405 tons for 1922 is many times higher than that of 1921, a slack year, and 67 per cent greater than that of 1920, when 457,338 tons of coal were handled. In 1919 the tonnage for the simi-

lar 32 working-day period was 305,126 tons in 6,309 cars, and in 1918, 478,185 tons in 7,913 cars.

The heaviest weekly period of coal-car loadings to vessels occurred during the week ended September 24, when 4,176 cars, or 8,800 tons, were dumped into lake boats at an average of 596 carloads a day. This was during ideal weather, with plenty of boats on hand. This volume was 14.3 per cent, or nearly one-seventh, of the entire shipments of coal dumped into vessels at Lake Erie ports during that week, which approximated 1,453,684 tons. This figure does not include coal dumped by the Toledo & Ohio Central, which, if added in, would bring the New York Central Lines quota on the lake transfer shipments to approximately 25 per cent. The maximum single day's loading at Ashtabula occurred on September 19, when 740 cars were dumped, a total of 37,000 tons.

Record in Loading Established for the Central

Coal handled at Ashtabula, however, is only approximately 10 per cent of the total tonnage handled by the New York Central Lines. A new record in coal loading on the Central's lines was established on October 20, when there was loaded 3,978 cars. The best previous record was made on September 25, when a total of 3,670 cars were loaded. Annually at points on the New York Central system between 500,000 and 800,000 cars are loaded with bituminous coal. Averaging 50 tons to a car, this would show an originating total tonnage of from 25,000,000 to 40,000,000 tons, or about 10 per cent of the nation's annual bituminous coal supply. These figures do not include coal traffic received from connecting carriers, which would bring the total figures much higher. During the same 32 working days (September 10 to October 18) for which figures for Ashtabula dock transfers have been given, 87,686 cars of bituminous coal were loaded on all roads of the New York Central system. This was a tonnage of 4,384,300 tons, an increase of 36.7 per cent over the same period of 1921, the figure for which was 64,122 cars, or 3,206,100 tons. At the Toledo docks of the Toledo & Ohio Central during these 32 days 7,763 carloads, or 388,150 tons, were transferred to lake vessels. New York Central officers on the Franklin division estimate that in the limited operat-

ing period of this year a tonnage far greater than that of the entire season of 1921 will be handled. All indications point to a complete neutralization of the shortage in the northwest by the time navigation closes on the lakes.

Coal and Ore Handling Equipment

Ashtabula harbor is situated north of the main line of the New York Central at Ashtabula and at the northerly end of the Franklin division, the branches of which extend from there into the Oil City and Clearfield districts of Pennsylvania and down to Youngstown, where connection is made with the Pittsburgh & Lake Erie and through it to other coal-carrying roads.

The yard, which is devoted exclusively to coal and ore handling, contains from 60 to 70 miles of track. It is divided into three large sections, *i. e.*, the bridge yard, the East system and the West system. The bridge yard forms a storage space for loaded coal cars which are fed to the car dumpers at the docks. The East system is a switch yard, through which the loaded coal cars are sent to the dumpers and transfer made of the empty cars to the ore docks and to other points. The West system is used for the receipt of empties from the East system and for the loading of ore exclusively. A large part of the yard work in connection with coal transferring consists of grouping the coal cars into the pools. The coal-loading equipment consists of two car dumpers, each of which may care for a vessel at a time.

Ore is unloaded from vessels at what are known as Docks No. 1 and No. 2. These docks can accommodate four of the largest lake vessels at a time and the unloading machinery handles two vessels at the same time. Ore is handled in much larger quantities than coal at Ashtabula, the unloading equipment and storage space being one of the largest in the country. The New York Central handles approximately 25 per cent of all the ore transferred from vessels to railroad at lake ports for rail haul to the furnaces.

Ore Traffic Shows Substantial Increase Over 1921

Traffic in ore declined in the year 1921, due to the business depression which first was felt in the fall of 1920, but the Central has, however, carried this year up to September 30 almost twice as much ore from Ashtabula Harbor docks to the furnaces as was carried last year. This year to September 30, 61,434 carloads, totalling 3,512,345 tons, have been handled, whereas the total figure for 1921 was only 38,693 carloads, or 1,997,514 tons. The record-breaking ore tonnage for the New York Central through the Ashtabula yards occurred during 1918, when 7,945,555 tons, or 158,898 carloads, were sent south from the port. The 1918 tonnage was followed closely by that of 1920, the figures for which show a total ore haul of 143,937 carloads, or 7,473,594 tons.

The most involved part of the task of transferring ore from steamer to cars is the grouping of suitable equipment from which the furnaces may unload. The unloading equipment at the furnaces governs almost entirely the class of equipment which may be loaded at the docks. The ore arriving in steamers is consigned to the furnaces, according to grade then required or to be needed in the near future. There are more than 32 grades of ore received at the docks. On arrival of vessels, yardmasters are given instructions as to the class of equipment wanted for a particular consignment and grade of ore to be loaded. The equipment suitable to the needs of the consignee is then fed into the system for loading.

The ore operation is an all-year around one, inasmuch as a large tonnage of ore is accumulated in the storage space on the docks for the winter supply of the steel furnaces. The storage capacity of the docks is 2,500,000 tons. At the present time there are about 1,500,000 tons on the docks awaiting draft of the furnaces this winter.

Two carloads a minute is the rate at which the ore unloading machinery operates. It consists of two batteries of four

each or eight Hulett 15- to 20-ton ore unloaders. Four of these are located on either side of the dock space and are operated independently of one another.

Each battery of unloaders spans four tracks, upon which the cars are spotted for loading.

When furnaces are supplied and all current orders for ore consignments are cared for, the cargoes arriving at Ashtabula are stored. Further handling is carried out by means of two large electric traveling cranes, or ore bridges, one for each dock. Each bridge has a span of 625 ft., is 75 ft. high and handles 15 to 20 tons at a time. The ore bridges can unload 100 cars in ten hours with average capacity of 5,000 tons in ten hours.

Pennsylvania Contemplates Extensive Improvements at Norfolk

THE PENNSYLVANIA contemplates the expenditure of approximately \$3,000,000 in the development of a rail-water terminal at Little creek, near Norfolk, Va. This information was made public in an address delivered by Elisha Lee, vice-president of the Eastern Region of the Pennsylvania, before a joint meeting of the Chamber of Commerce and the Board of Trade of Norfolk, Va., on October 30.

The Pennsylvania, at the present time, reaches Norfolk by car ferry from Cape Charles, Va., a distance of 36 miles. The development of Little creek, for which the company has already acquired about 1,000 acres of land, will shorten the water haul to 25 miles and will necessitate a new terminal, some new track and the acquisition trackage rights over other lines. Definite arrangements for these trackage rights have not been made as yet, but negotiations are under way and it is thought that they will be carried to a successful conclusion. A new freight warehouse will be built at Norfolk.

Aside from the long water haul, the incentive for the improvement is the congestion of traffic in Elizabeth river, Norfolk, through which all the company's traffic must now pass. In addition, there has been a great increase in traffic between Norfolk and Cape Charles. In 1910 this totaled 125,000 loaded freight cars and 146,000 passengers. During the height of the war activity, freight traffic rose to 190,000 cars and passenger traffic exceeded 500,000. Since that time, there has been some falling off in traffic because of the closing down of many of the war activities in the vicinity of Hampton Roads. Nevertheless, traffic is holding up far above pre-war levels and gives every promise of continuance and a steady growth.

Mr. Lee concluded his address by calling attention to the importance to business men of such improvements as the Pennsylvania is planning for Norfolk and to the fact that these cannot be carried out without money. He urged that business men give their support in helping the roads to maintain their credit in such fashion that extensions and improvements can be made as needed.

THREE HUNDRED DOLLARS DAMAGES for getting in the way of a moving locomotive, was the verdict won by the Central Railroad of New Jersey at Freehold, N. J., on October 24, in a suit against the Colonial Ice Cream Company of Philadelphia, based on the cost of repairs to one of the railroad's locomotives which, on April 8, last, struck a truck of the ice cream company at Larrabee's Crossing, between Lakeview and Farmingdale. The judgment was recorded by Judge Richard Doherty in the Circuit Court. Two employees of the ice cream company were killed and the truck was virtually demolished, but the evidence showed that the employees were to blame for the collision.

Development of Concrete in Railway Construction*

Application of This Material to Other Than Bridges— Discussion of Importance of Waterproofing

By M. Hirschthal

Concrete Engineer, Delaware, Lackawanna & Western

THE DETAILS in connection with the design of reinforced concrete viaducts that are of the utmost importance are those of expansion joints and waterproofing and in connection with the latter, drainage. A concrete viaduct where the waterproofing is defective or where expansion has not been properly provided for, defeats the object of its selection, requiring a considerable expenditure for maintenance

expansion joint dykes. To eliminate any possibility of the accumulation of water at any point along the viaduct a system of drainage was devised; cast-iron drain pipes sur-

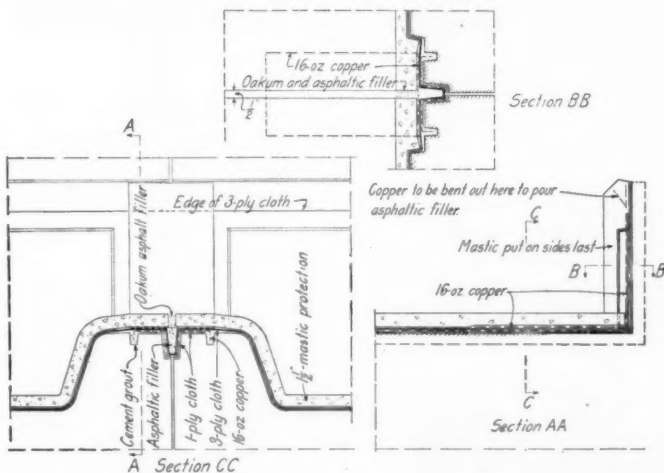


Fig. 33—Waterproofing Details for an Expansion Joint

because of the dangerous conditions resulting from leaks due to failure of either of the above details. It is for these reasons that particular attention was given to the subject of waterproofing and expansion joints and after exhaustive investigation the types described below were selected.

The waterproofing for the Tunkhannock and Martin's Creek viaducts consists of a membrane of 3-ply asphalt



Fig. 34—Pleasing Application of Concrete Construction to the Passenger Station at Far Hills

saturated, cotton fabric laid in asphalt and a protection coat of two $\frac{3}{4}$ in. thicknesses of asphalt mastic laid completely across the floor system and up the sides of the parapets and



Fig. 35—Reinforced Concrete in a Large Building, a Coal Breaker

mounted by cast-iron screened drain boxes were placed at the center of each cross wall supporting the floor arches,



Fig. 36—An Admirable Application of Concrete to a Signal Tower at Montclair

*This is the third of three articles, the first of which appeared in the *Railway Age* of October 14, page 705, and the second in the *Railway Age* of October 28, page 791.

except at expansion joints and located at the center between tracks, the bridge floor being pitched toward these drain pipes, forming a hip at the crown of the floor arches.

The expansion joints of the Tunkhannock viaduct are located at approximately the one-quarter points of the main

shop and office and storage building, are entirely of concrete and most of the members of the other buildings are also of concrete.

A splendid example of a concrete station of which there are a number along the line is that at Far Hills, Fig. 34,



THREE DESIGNS OF PLATFORM CANOPIES

Fig. 37—Concrete Canopy with Curved Outline at Watsessing

Fig. 38—Concrete Canopy Conforming to Straight Lines at Bloomfield

Fig. 39—Canopy with Steel Ribs, Giving Much the Same Appearance as Concrete

arch spans and on either side of each pier and consist of a $\frac{1}{4}$ -in. opening starting from the haunch of the floor arches normal to the soffit, running vertically upwards through the center line of the wall with a dyke on each side of the opening extending nine inches or one foot above the floor

and it shows the adaptability of concrete to the architectural treatment required by this type of structure.

A class of buildings offering many different problems in design, are coal breakers, an example of which is shown in Fig. 35. Signal towers, of which Fig. 36 is a typical ex-

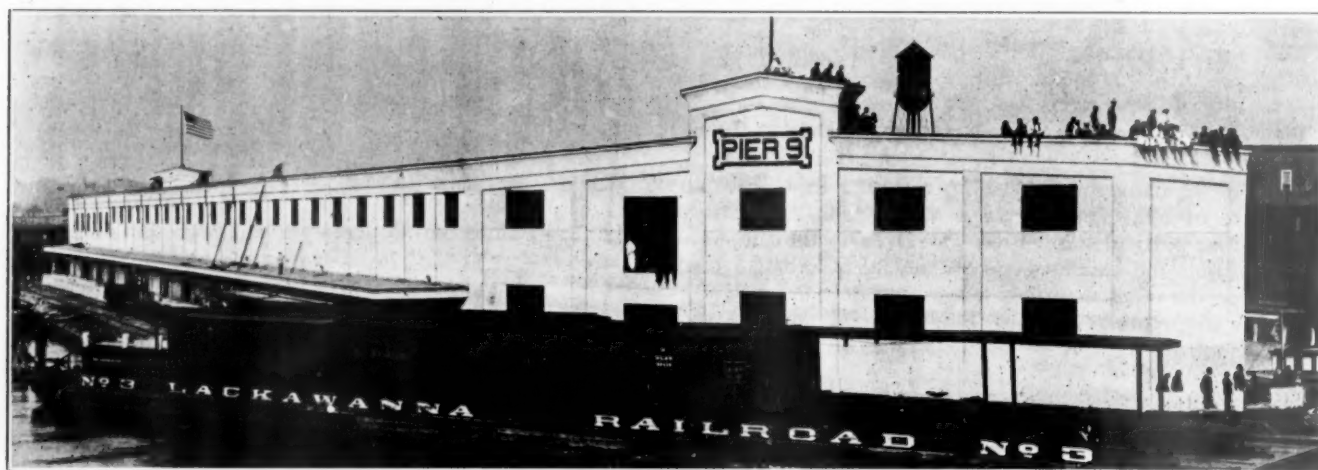


Fig. 40—Example of Concrete Construction as Applied to Pier Sheds

to form a dam and the floor adjacent thereto is pitched toward the next walls to shed water. The joints were provided with both sheet copper and saturated cloth as well as mastic protection after the opening had been filled with asphalt compound. The maximum distance between expansion joints is 83 ft. 9 in. Similar provisions have been made for the other viaducts and bridges, both arched and flat. These provisions have proved effective and have dispensed with any maintenance thus far. Fig. 33.

While bridges are the principal and most important structures pertaining to railroad work, there are structures other than bridges and reinforced concrete has been represented in the construction of these as well:

As has already been mentioned, in the erection of the Kingsland and Keyser Valley shops concrete was used for foundations, floors and subways. In the Scranton locomotive shops, however, some of the buildings, notably the pattern

ample, have excited the admiration of many railroad men. An automatic signal sub-station was recently erected of concrete at Harrison, N. J. The building was so designed that

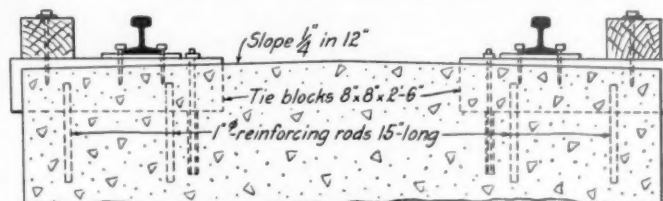


Fig. 41—Track Construction in the Bergen-Hill Tunnel

should it be required to change its location, it can be lifted from its foundations and transported to the new site chosen for it.

While station canopies are in fact facilities in connection with station buildings, they often provide interesting problems which make them independent studies. The Watsessing station is located at the street level while the tracks and

completely enclosing the cinder fill which was placed on top of the deck and carried to the base of rail, forming a very solid structure. At piers Nos. 7 and 9, sheds were erected on top of this type of pier of concrete and structural steel,

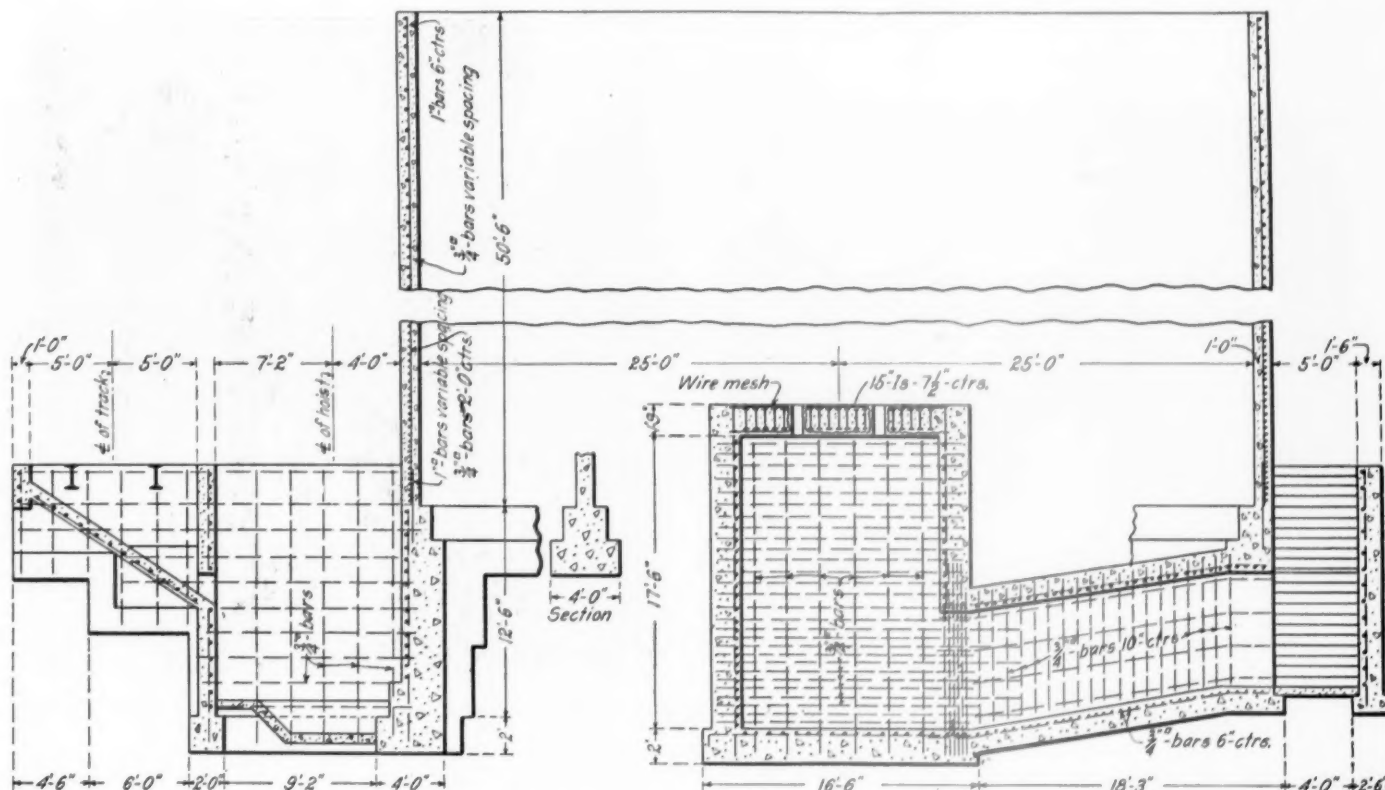


Fig. 42—A Large Concrete Sand Storage Bin

platforms are in a depression. The foundations of the station were formed to an elliptical arch and the underside of the canopy beams conforms to the curve of the intrados of the arch with the results shown in Fig. 37. The Bloomfield station, on the other hand, is on a fill so that the problem is somewhat simplified. The effectiveness of the reinforced con-

crete canopies is shown by Fig. 38. In the case of the station at Madison, the canopy construction consists of concrete columns and roof slab, while the cantilever beams and purlins are of structural steel, Fig. 39.

To obviate the necessity of frequent repair and renewal incident to timber construction a novel type of construction was resorted to in the design of the Hoboken piers. The piles were cut off at low water and completely decked with timber; a heavy concrete bulkhead wall was constructed,

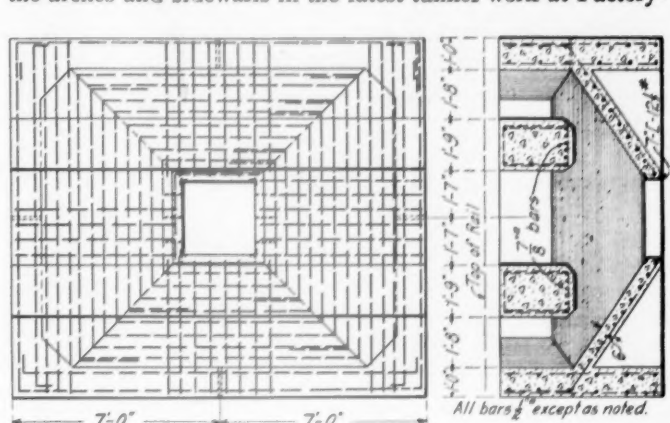


Fig. 43—A Concrete Foundation for a Water Tank

crete canopies is shown by Fig. 38. In the case of the station at Madison, the canopy construction consists of concrete columns and roof slab, while the cantilever beams and purlins are of structural steel, Fig. 39.

To obviate the necessity of frequent repair and renewal incident to timber construction a novel type of construction was resorted to in the design of the Hoboken piers. The piles were cut off at low water and completely decked with timber; a heavy concrete bulkhead wall was constructed,

Fig. 44—Example of a Track Hopper for a Coaling Station

ville, Pa., using concrete for the shafts, backing and ditches. In the construction of the Bergen Hill tunnel a concrete road-bed was installed, a feature that has been amply described in detail heretofore in articles and which is shown in Fig. 41.

Among the structures which are classed as miscellaneous

the largest is the sand storage and dryer tank constructed of reinforced concrete at Scranton, Pa., with a capacity of 90 carloads of sand; the details of which are shown in Fig. 42.

Up to recently, water tank foundations, when not of steel or timber were made of solid concrete with a chamber to house the pipes. Figure 43 however, shows one of reinforced concrete at Black Rock, N. Y. to supplant the one of solid concrete heretofore used to support steel tanks. Track hop-



Fig. 45—Reinforced Concrete Cinder Pits at Scranton, Pa.

pers for a coaling station at Buffalo, N. Y., were designed to meet the special case there existing in connection with the coal conveyor, Fig. 44. Cinder pits have been constructed of concrete at various points, but the one for the power house at Hoboken, N. J., presents unusual difficulties because of the conditions surrounding it. The necessity of employing divers in the tidal waters for construction caused modifications in the design to the extent that entirely unusual combinations were required, Fig. 45. Among the minor uses of

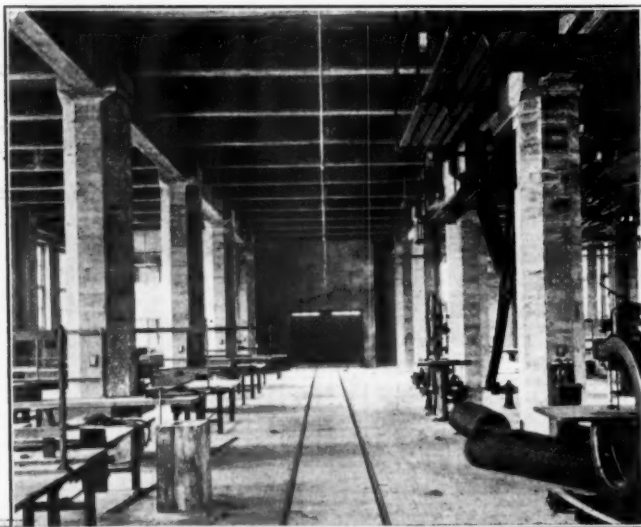


Fig. 46—Reinforced Concrete Building Construction for a Pattern Shop

concrete are in the construction of pipes, piles, box culverts, ducts, manholes, storage battery wells, fence posts, etc.

While it has not been the object of this article to claim that concrete plain or reinforced is a panacea for all structural ills, the writer has attempted to point out the adaptability of this material for a multitude of uses and con-

ditions and its actual adaptation to railroad construction as illustrated by its use on the Lackawanna.

The first chief engineer to countenance the use of concrete for engineering structures on the Delaware, Lackawanna & Western was W. K. McFarlin. Messrs. Lincoln Bush and

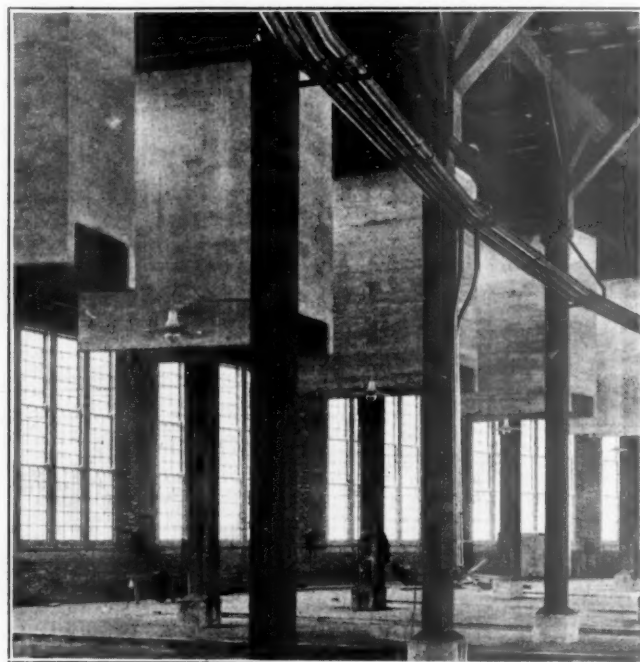


Fig. 47—Reinforced Concrete Smoke Jacks in a Roundhouse at Scranton, Pa.

G. J. Ray who followed him have been instrumental in expanding the uses of concrete to the great development it has now attained. B. H. Davis was the first engineer in charge of concrete design, followed by A. B. Cohen and the writer who is the present incumbent.

Price Fixing and Competitive Bidding on Railroad Securities Opposed

WASHINGTON, D. C.

THE INTERSTATE Commerce Commission was strongly advised at a hearing before Division 4 at Washington on October 26 against embarking upon a plan of fixing the prices at which railroad securities should be sold or requiring competitive bidding in the sale of securities in connection with its orders granting or withholding authorization and approval for the issuance of securities. The hearing was called to give an opportunity for the expression of views on questions which have been considered by Division 4 as to whether and to what extent the commission should determine, limit or restrict the price at which, or the manner in which securities are to be sold; the cost to the carriers of the marketing of securities, and whether it is within the province of the commission to require competitive bidding and whether competitive bidding should be required. Division 4 consists of Commissioners Meyer, Daniels, Eastman and Potter, but Commissioners McChord and Hall also sat with them during the hearing. The commission was told that if the time comes when it considers it necessary to set up its own judgment against that of the railroads and the bankers as to proper prices for railroad securities, it should take the responsibility for the financing of the railroads out of the hands of private management, but that except in cases where there appears a direct conflict with public interest the com-

mission should allow a free hand to those who have the financial responsibility.

Robert S. Lovett, chairman of the Union Pacific, appeared as chairman of a special committee of the railroad executives and expressed the opinion that the commission should not change its present methods of supervision, under which, in giving approval to an issue, it has usually stipulated that the securities should be sold for not less than a given price, but the price has usually been that at which the railroad had stated it expected to be able to sell, if, indeed, it had not made definite arrangements in advance. He said that Kuhn, Loeb & Co. will pay just as much as the securities are worth and just as much as any other banking house could pay for them and that it is of great value for a railroad to have established connections with such an institution. He also referred to the importance of prompt action in placing securities, saying that while the present method of the commission, entailing from four to six weeks before a decision is announced upon a company's application, has not caused a serious delay in the last 18 months, while there was a rising bond market, even that amount of delay might become of more importance should the market condition be reversed so that prices would be liable to fall between the time that applications are filed and authority granted. Judge Lovett said it is not within the power of the commission to require that securities be sold to the highest bidder.

Otto H. Kahn, of Kuhn, Loeb & Co., also expressed opposition to the plan of requiring competitive bidding. He said the services of a banking house are of great value to railroads and that if securities were put up for sale to the highest bidder without the necessary preparatory work, the bankers naturally would pick and choose among issues offered and many railroads would run risks of finding themselves faced with failure to get securities taken. He also described to some extent the competition which exists among banking houses under present conditions.

F. J. Lisman, of F. J. Lisman & Co., said it is frequently easy to say afterward that a certain price was too low, but that some one must have the courage of his conviction to decide what is a fair price at which securities can be marketed. He also pointed out that competition exists even though railroads do not request competitive bids. If the large banking houses were to show an unwillingness to pay fair prices companies would promptly be formed to compete with them and they would lose their hold on the business. A plan of competitive bidding that might work in a rising market, he said, would not be successful in a falling market and in the long run would do much harm to railroad credit by interfering with the free play of human judgment. Bankers are not going to concern themselves with what the price of a security is going to be 60 days hence, because it cannot be determined any more than one can say where the thermometer will be on a given day.

W. A. Colston, vice-president of the New York, Chicago & St. Louis, said he proceeded on the assumption that the commission's power is plenary and exclusive, but that the commission should determine, limit or restrict the price at which, and the manner in which a security shall be sold and the cost to the carrier only when necessary in order to bring the transaction within the public interest as prescribed by the statute. However, it should impose no restriction on the action of the carriers which is not necessary to bring it within the public interest. The government has not undertaken to assume the responsibility for the financial management of the railroads and the authority should go with the responsibility. The commission is not the financial manager of the railroads, he said, just as the Supreme Court has said that the government is not the general manager of the railroads.

Mr. Colston said that in 1920 the commission in effect did limit the prices of railroad securities in connection with the administration of the loan fund. Whereas the carriers

had been paying $7\frac{1}{2}$ per cent on equipment trust certificates, the commission made a requirement that in case part of the funds were supplied from the loan fund, the balance should bear no more than seven per cent. It was said that this could not be done, but it was done and was in the public interest, but he said a great southeastern carrier came in and offered to pay over seven per cent for a large issue of securities rather than take a government loan at six per cent, in order to establish its own credit without government aid, and the commission wisely permitted it to do so. The commission should not attempt to issue rigid rules to cover all cases. If it were possible to do so, Congress would have prescribed the rule in the law instead of placing discretion with the commission. Mr. Colston said that there are some cases in which competitive bidding should be required, but it would not be proper for the commission to require competitive bidding if it were also to require that the lowest bid must be accepted because the lowest bid is not always the one most in the public interest.

Dwight W. Morrow, of J. P. Morgan & Co., testified along similar lines. He said that in the eight years of his connection with the company he had never known of any advantage to accrue to a banking house from having a representative on the board of directors of a railroad, from the standpoint of getting business from that railroad. Such representation is rather a responsibility, he said. Commissioner Hall asked Mr. Morrow if there is any reason why a prosperous railroad company should not attempt to sell its own securities through its own offices. Mr. Morrow said he did not see why this could not be brought about, but he pointed out some objections. In many states, he said, the amount of the local investment funds is probably bid for at much higher rates than a railroad could pay as the low rates for money prevail in older regions where there is an accumulating investment fund. He pointed out that the American Telephone & Telegraph Company is selling a large percentage of its stock to its own subscribers and employees all over the United States, but at nine per cent. In reply to a question by Commissioner Potter, he said the Northern Pacific and Great Northern refunding issue of \$230,000,000 last year could not possibly have been handled "across the counter"; that the services of a large distributing organization were necessary. Mr. Morrow said it might be desirable for railroads to undertake to sell more of their own securities themselves, but that it is doubtful if any railroad could create an organization to handle its own securities as cheaply as it could be done by an organization whose sole business it is and which handles a large volume of business over which the overhead can be distributed. A. H. Harris, vice-president of the New York Central, said that the New York Central had undertaken a campaign to sell its stock to employees, but that in a year the subscriptions amounted to something less than 5,000 shares. The company thought that it is highly desirable to interest the employees in the ownership of the company, but that such a plan could not be depended upon to furnish capital in any substantial amounts. Mr. Morrow said he had never known bankers to interfere with matters of railroad operation, as such matters were outside their especial sphere, but they frequently give advice regarding financial policies such as matters pertaining to the payment of dividends.

Jackson E. Reynolds, president of the First National Bank of New York, said that it is a matter of indifference to his company whether the commission decides that railroad bonds shall be sold on competitive bids. It would not hurt the bankers, he said. "The only people you would hurt would be the railroads."

John E. Oldham, of Merrill, Oldham & Co., Boston, said that the banker would be taking considerable risk if required to make a bid and wait for some time before knowing whether it is to be acted upon. He said there were no insuperable

obstacles to finding what is a fair price for a security and if the object of competitive bidding is to furnish information, there are better ways of getting at it. Commissioner Potter asked what the commission should do supposing President Rea of the Pennsylvania should sell an issue of bonds at 93 and tell the commission that that was the best he could do, but the commission's Bureau of Finance should report that it thought he ought to have got 93½ or 94. "Shall we kick over the whole transaction?" asked Commissioner Potter.

"I think you had better take Mr. Rea's judgment," replied Mr. Oldham. "When you cannot do that, the government had better take over the railroads."

He said he thought the purpose of Congress was to prevent fraud rather than to substitute the judgment of the commission for that of the railroads and the bankers as to the exact prices at which securities should be marketed. Commissioner Eastman asked what the commission should do in case its own investigation showed that the price for the security mentioned by Mr. Potter should be as high as 102. Mr. Oldham said that in a case of such a wide discrepancy the commission should look into it.

Alfred P. Thom, counsel for the Association of Railway Executives, and Forney Johnston, counsel for the National Association of Owners of Railroad Securities, were given permission to file written memoranda on the subject.

Brief for Association of Railway Executives

Mr. Thom said in part in his brief:

The powers vested in the commission by this Section were conferred for the purpose of enabling the commission to protect the public interests and not for the purpose of making it the guardian of the private interests of the carriers.

At times it may be difficult to determine just where the public interest ends and purely private interest begins; but, when this point is once determined, the difficulty of the problem disappears, it being clear that the power of governmental regulation cannot extend further than the protection of the public interests.

This follows both from the constitutional limitations on the power of government and from the terms of Section 20a of the Transportation Act.

The ownership of property carries with it the right of occupancy and management, and should a statute deprive the owner of the right of management, except as such management may prejudice or affect some right of the public, it would undermine his right of private property and be contrary to the fifth amendment to the Constitution.

Congress had these limitations on its power well in mind when it made Section 20a a part of the Transportation Act, for in that section the power of the commission is to be exercised only if the transaction is "compatible with the public interests," is "necessary or appropriate for or consistent with the proper performance by the carrier of service to the public as a common carrier," "will not impair its ability to perform that service," and "is reasonably necessary or appropriate for such purpose."

No inference can be deduced from these carefully considered provisions of a purpose to go beyond the public interest and invade the field of private management.

If the power to require competitive bidding is conferred by the statute, it would not be wise for the commission to make the requirement. The present method, which is the outgrowth of years of experience, is unquestionably the best and is, in fact, the only practicable method.

There is doubtless a popular misapprehension of what the present method is. It may be popularly supposed that when a railroad deals with its banker in respect to the placing of securities, the banker seeks to drive as hard a bargain as he can and to obtain for himself the maximum possible advantage in the transaction. Nothing can be further from the fact.

The placing of securities through a regular banker is accomplished by one of two methods:

First, by the method of underwriting, in which case the banker undertakes, for a fixed commission or compensation, to ascertain for his railroad client the best terms that can be obtained for the issue and to give the railroad the full benefit of these terms, being interested only in the agreed compensation, and

Second, by the method of purchase. In this case also, where there is a sustained relationship between the railroad and its banker, the banker likewise undertakes to ascertain for the railroad the best terms at which he believes the issue of purchased securities may be placed and makes his price the figure that will give him fair compensation for selling the securities, but, at the

same time, will conserve the interests of the railroad company, for which, by reason of his relationship, he feels a moral responsibility, and will likewise be fair to the investing public whose good-will he desires to retain. In this second case also, the fiduciary relationship of the regular banker exists and is enhanced by the moral responsibility he has to the purchasers of previous issues, this responsibility influencing him to regard not merely his own selfish interests in the single transaction but to make terms which will accommodate the present issue to a well conceived financial structure for the railroad.

In both cases, the relationship between the railroad and its regular banker is fiduciary in character and, in a measure, is such as exists between a lawyer and his client, in which the banker becomes a representative of its railroad client's interest and is paid for the service.

The service consists in the study of financial conditions, the forming of an expert judgment as to whether the time is opportune for placing securities, as to what class of securities, and the conditions and terms the market will accept, and a guarantee that the issue will succeed.

To do this successfully, it is necessary in most cases to have a country-wide financial organization, consisting of persons who will help float the issue and a group that will itself take any part of the securities that the investing public fails to absorb.

If an issue is offered which fails, it is a matter of general recognition that the consequences to the credit of the railroads are most disastrous. When the public fails to take an offering, it is an unmistakable announcement that the credit of the railroad is not sufficient to support it. If an issue, necessary for the financial purposes of a strong railroad is offered by it over its own counter or through any other agency, and only a part of it is taken, the part which remains untaken is discredited along with that which has been taken which, owing to the failure of the part, will then be in the hands of discontented holders.

A fundamental principle of sound financing for a railroad is that it shall not make an issue of securities until it is assured that the issue will succeed. No method of giving this assurance has yet been devised except the existing method of having the whole issue underwritten or the whole issue purchased by responsible bankers.

The question is what in any case constitutes fair compensation for the banker's service. There can be no doubt of its value nor that it is essential to successful financing. There may be cases where an issue may be disposed of without it, but these cases are most exceptional and furnish no justification for the abandonment of the orderly and scientific method. The amount of this compensation is, under the existing practice of the commission, subject to its supervision.

Competent bankers know whether the time is ripe for an offering of securities. Railroads and their counsel have no such knowledge, and if, without the aid and enlightenment of competent financial advice, an issue is offered and fails, the effect on the credit of the railroad would, as heretofore stated, be most disastrous. Competent bankers also know the character of securities which the public is ready to take.

Railroads and their counsel do not know, and yet it is of the utmost importance to be competently advised as to what class of security may be most advantageously issued.

They must have some one with scientific knowledge of finance and of markets to advise them and some one pledged to give them advice from the standpoint of the railroads' interest and not from the standpoint of trying to impose on the railroads the harshest terms that independent self-interest may make possible.

Moreover, the financial structure of most of the roads is very intricate and the terms of their mortgages are complex and involved. Whenever a new issue is proposed, there is a substantial value in having a financial adviser fully conversant with the financial structure and history of the company and able to suggest terms and conditions for new securities in harmony with a financial policy deliberately adopted and properly adjusted to the consistent development of the property, and not to have new, variant and perhaps inconsistent conditions imposed on each new issue as compared with those imposed by other bankers and their counsel in existing issues.

This continuity of financial policy cannot be attained without the aid of bankers fully advised in respect to it and actuated by a feeling of responsibility for and committed to its success. The advantage of consistent financial advice and guidance in building up and developing a sound financial structure is equally as great, if not greater, than consistent legal advice given by a single head conversant with the history, purposes and policies of the management, the needs and possibilities of the property, its intricate and interwoven corporate relationships, its charter obligations and the responsibilities it is under to persons, municipalities, state and other governmental authorities; and yet no one engaged in any large industrial enterprise would advocate doing its law business by competitive bidding or calling in a new lawyer every time legal

advice and guidance is needed. The asset of intelligent, informed, consistent and interested—interested from the standpoint of the company in the establishment and development of a sound financial policy—is too great to the public to be abandoned.

It is inseparable from the relationship existing under the present system that the company's bankers feel a special responsibility and a moral obligation to help in times of financial stress and difficulty, which is most valuable and at times essential to the company and which has frequently averted from the public, as well as from the company, financial disaster.

If a system of competitive bidding is resorted to, the rules of the commission would naturally provide either that the best bid should be accepted or, if none of the bids were satisfactory, that all should be rejected and another public offering made.

If the first alternative be adopted, the commission would find itself without power to pass finally on the price and thus would be sacrificing that very important power over the result in the effort to control the method.

If the second alternative is resorted to and all bids rejected, then there would be a manifest difficulty in persuading bidders to make a second bid.

If the system is not competitive in its strictest sense, but consists only of reporting to the commission the outcome of negotiations with more than one or with several responsible bankers, the result would likewise be unsatisfactory and hurtful to the financial interests of the railroads; for the reason that deliberate study and valuable advice cannot be obtained from bankers where the results of it may be enjoyed by others, for if the business is offered to several, there would be no assurance that the banker who studies the problem, devises the plan and assists in perfecting it, will secure the business. The consequence would be that one of the most valuable functions and services of a banker would be lost to the railroad. The railroad would, as a matter of fact, have lost its banker.

It may be that competitive bidding would in an individual instance or a special case produce better financial results for the railroad, but the slight and exceptional advantage thus temporarily obtained would not justify a system which would be injurious and disastrous in its general operation.

The interests of the public are amply protected by the supervision of the terms proposed for the issue of securities before they can be lawfully accepted and made operative.

Traveling Engineers Hold Thirtieth Convention

W. O. Thompson, Secretary, Since the Association Was Organized, Honored at the Opening Session

A REMARKABLE TRIBUTE to his constant service in behalf of the Traveling Engineers' Association throughout the 30 years since the organization had its inception, was paid by the members and friends of the association to W. O. Thompson, the secretary and only living charter member, at the opening session of the 1922 convention, held at the Hotel Sherman, Chicago, October 31 to November 3, inclusive. A three-quarter length portrait of Mr. Thompson, in oil, was presented to the association. In accepting, the association voted to have the portrait hung in the convention hall at all future meetings. The presentation was a complete surprise to Mr. Thompson.



W. O. Thompson

The convention was called to order by the president, J. H. De Salis (N. Y. C.), who, after the invocation addressed the association in part as follows:

President De Salis' Address

"The greater part of our members serve as instructors of locomotive engine crews, and personally observe the performance of the locomotives and the crews operating them. Their responsibilities cover all parts of the locomotive and its proper operation, both from a mechanical and transportation standpoint. The traveling engineer is required to be a specialist on the many devices that go to make up the successful and economical operation of a train.

"Education for the men holding these positions is necessary. Their duties place them in a position where mistakes cannot be corrected; they must act right the first time. If the train is not started in the proper manner the mistake means broken draft rigging or broken cars. If the train is

not stopped properly it may mean derailment or collision, and if a train is not properly operated when running it may not make the schedule time or will cause a loss of fuel. At these conventions are brought out the best methods of educating engine crews. In the proceedings is found the best practice for the successful operation of trains, and a book published by this association entitled 'Standard Form of Examination for Firemen' is being used by many railroads for the examination of new men and of candidates for promotion."

Following Mr. De Salis' address, a brief resumé of the early history of the association, prepared at the request of the executive committee, was presented by Mr. Thompson, of which the following is an abstract.

Early History of the Association

A short time after the adjournment of the Master Mechanics' and Master Car Builders' convention in 1892, a road foreman of engines of one of the lines running into Chicago listened to a conversation between his master mechanic and a representative of the Westinghouse Air Brake Company relative to the good work accomplished at the convention and how beneficial it was for a man in railroad business to meet other men in the same business from all parts of the country for the purpose of exchanging views and experiences.

The conversation led the listener to think that if the Master Mechanics' Association was of such inestimable value, why would not an association of traveling engineers be of even more importance, not only to the traveling engineers, but to all departments of the railroad.

Acting on the thought, he started out to find traveling engineers enough to form an association, and, strange as it may seem with our membership of over 1,500 in the United States, Canada and Mexico, he was over three months in getting the names of 14 traveling engineers who were in favor of the idea.

After the 14 traveling engineers had been heard from, a meeting was held at Chicago, November 14, 1892. The result of that meeting was the forming of a temporary organization. During the meeting an invitation was received from Sinclair and Hill, of Railway & Locomotive Engineering, to meet in their office in New York City to perfect a permanent organ-

ization. This meeting was held on January 9, 1893, and 53 members were enrolled.

During the first few years of the association's existence its condition was rather precarious. At that time the newly created position of traveling engineer was not looked upon as an actual necessity by the managements of many railroads. In the panic of 1894 and 1895 approximately 70 per cent of our membership was set back to running engines and had it not been for the hard, painstaking work of a number of our members, the almost immediate popularity of reports and researches of our committees, the loyalty of a few of the higher railroad officials, the press and a few of the railway supply firms, the association would have died in its infancy.

The benefits to the traveling engineer have also been great. Thirty years ago he was considered nothing more than an engine-tamer and trouble-doctor, but today he is considered an indispensable adjunct of any well-organized railroad.

The association has grown from a membership of 53 to 1,536. During its life 575 members have been selected to fill higher positions on railroads or in other businesses. In all of the 30 years there has never been a decrease in membership. Nearly all of the members who have been promoted to higher positions continue their membership, thus giving the association their moral and financial support. Considering these facts, the pride which the traveling engineers feel in their association is pardonable.

Portrait of Secretary Thompson Presented

At the close of the paper, D. L. Eubank (Galena Signal Oil Company) unveiled and presented Mr. Thompson's portrait to the association. In his remarks leading up to the presentation he brought out the fact not mentioned by Mr. Thompson in his paper that the author was in large measure responsible for the organization of the association and for its healthy growth during the early years of its existence.

On behalf of the members, tributes were paid to Mr. Thompson's service to the association by L. D. Gillett (Dominion Railway Commission of Canada) and D. R. McBain. Members of the Traveling Engineers' Association, of the Railway Equipment Manufacturers' Association, and the Hotel Sherman participated in providing the portrait.

A report of the later sessions of the convention will appear in a later issue.

Equipment Manufacturer's Exhibits

The following companies, members of the Railway Equipment Manufacturers' Association, exhibited at the thirtieth annual convention of the Traveling Engineers' Association, held at Hotel Sherman, Chicago, October 31 and November 1, 2 and 3:

American Arch Co., New York.—Literature.—Represented by F. G. Boomer, G. M. Bean, A. W. Clokey, R. J. Himmelright, J. T. Anthony, Major W. L. Allison and W. E. Salisbury.

American Locomotive Co., New York.—Reverse gear, flexible and rigid staybolts.—Represented by G. P. Robinson, W. E. Corrigan, A. Haller and George G. Jones.

Baldwin Locomotive Works, The, Philadelphia, Pa.—Literature and photographs.—Represented by C. R. Riddell, N. E. Baxter, C. H. Gaskill and F. A. Neely.

Barco Manufacturing Co., Chicago.—Power reverse gear; cross-head and shoes; automatic smoke box blower fittings; metallic tender connections for air, steam, oil and water; joints to air reservoir, air pumps, distributing valves, headlight generators, etc.; roundhouse blower and blowoff; coach yard and station steam heat and air connections; metal steam heat connections for passenger coaches.—Represented by F. N. Bard, C. L. Mellor, F. A. Stiles, W. J. Behlke and C. O. Jenista.

Bird Archer Co., New York.—Boiler compound, polarized mercury, anti-foaming and anti-leaking compounds.—Represented by L. F. Wilson, J. L. Callahan and G. J. McGurn.

Boss Nut Company, Chicago.—Nuts, bolts and rivets. Represented by J. W. Fogg, A. W. MacLean, W. G. Willcoxon and George A. MacLean.

Bradford Draft Gear Co., New York.—Boltless truck column; twin journal box nut; three spring draft gear; rocker type draft

gear, and locomotive throttle.—Represented by Horace Parker, F. K. Mays, E. L. Nusz, J. C. Keene, W. W. Bossier, W. H. McWhorther and E. J. Barnett.

Morris B. Brewster, Inc., Chicago.—Metallic piston rod; valve stem and air pump packing; pressure breaker piston rod packing. Represented by Morris B. Brewster and Frank A. Orland.

Crane Company, Chicago.—Valves and pipe fittings. Represented by Fred Venton.

Dearborn Chemical Company, Chicago.—Represented by Nelson F. Dunn, O. H. Rehmeier, I. H. Bowen, Ira Beebe, Joseph Arn, L. P. Bowen, George R. Carr and J. D. Purcell.

Detroit Lubricator Company, Detroit, Mich.—Locomotive lubricators; automatic locomotive exhaust nozzle cover; automatic flange oilers. Represented by A. G. Machesney.

The Duff Manufacturing Company, Pittsburgh, Pa.—Jacks for locomotive and car work. Represented by C. N. Thulin and E. E. Thulin.

The Edna Brass Mfg. Co., Cincinnati, O.—Lubricators, injectors, boiler checks, water gages, cold water sprinklers and fire extinguishers.—Represented by H. A. Glenn and F. S. Wilcoxon.

Elvin Mechanical Stoker Co., New York.—Photographs and literature.—Represented by A. G. Elvin and E. W. Englebright.

Flannery Bolt Co., Pittsburgh, Pa.—Grease plugs; flexible stay bolts.—Represented by W. M. Wilson.

Franklin Railway Supply Co., New York.—Radial buffer and unit safety bar; precision power reverse gear; pneumatic fire door; lateral motion driving box; automatic driving wedge; driving box lubricator and spreader; flexible conduit, and reverse gear.—Represented by W. N. Coyle, J. L. Randolph, H. M. Evans, C. W. F. Coffin, J. L. Bacon, T. L. Reed, S. D. Rosenfelt, W. T. Lane, P. Weiler, P. Willis, H. M. Clawson, F. H. Cunningham and C. J. Burkholder.

Galena Signal Oil Co., Franklin, Pa.—Represented by Robert McVicar, W. J. Walsh, P. H. Stack, D. L. Eubank, W. O. Taylor, W. F. Walsh, G. W. Buckpitt, W. L. Trout, L. H. Palmer, J. W. Bunn, B. P. Corey, J. A. Roosevelt, J. F. Ferguson, A. J. Poole, G. E. McVicar, F. B. Smith, J. F. Wilsey, R. J. McQuade, I. T. Birney, J. A. Graham and J. S. Brown.

Garlock Packing Company, Palmyra, N. Y.—General line of locomotive and power house packings. Represented by C. W. Sullivan and Stanley MacDole.

Grip Nut Co., Chicago.—Locomotive and pump piston rod nuts; unit nuts.—Represented by W. R. Richards and R. B. Radcliffe.

Hulson Grate Company, Keokuk, Iowa.—Full size locomotive grate showing rocking dump grate. Represented by A. W. Hulson, J. W. Hulson and A. E. Wentworth.

Hunt Spiller Manufacturing Corp., Boston, Mass.—Cylinder and valve packing rings; valve chamber bushing; piston and valve bull rings; crosshead shoes, side rod knuckle pin bushing.—Represented by J. G. Platt, V. W. Ellet, E. J. Fuller, C. Galloway and Fred Hartman.

International Correspondence Schools, Scranton, Pa.—Literature.—Represented by Ed. M. Sawyer and F. S. Powell.

Jenkins Bros., New York.—Valve and sheet packing.—Represented by George Royal.

The Leslie Company, Lyndhurst, N. J.—Steam heat pressure regulators and reducing valves. Represented by S. I. Leslie and J. J. Cizek.

Locomotive Lubricator Co., Chicago.—System of locomotive force feed lubrication.—Represented by W. J. Schlacks and C. W. Rudolph.

Locomotive Stoker Company, Pittsburgh, Pa.—Mechanical stoker, one-third size working model. Represented by A. C. Deverell, A. N. Wiltse, E. Prouty, V. B. Emerick, J. B. Ball, H. C. Woodbridge and H. C. Kelly.

Madison-Kipp Corp., Madison, Wis.—Force feed locomotive lubricator.—Represented by A. H. Flanagan, J. M. Borrowdale and S. W. Midgley.

Manning, Maxwell & Moore, Inc., New York.—Injectors; consolidated safety valves.—Represented by C. L. Brown, J. S. Smith and C. Corning.

W. H. Miner, Chicago.—Friction draft gears; friction buffers for passenger equipment; spring draft gear; side bearings; coupler centering device for passenger and locomotive equipment; bolster locking center pin for passenger equipment. Represented by Bradley S. Johnson and Charles F. McCuen.

Nathan Manufacturing Co., New York.—Injectors; bulls eye and force feed type lubricators; boiler checks; boiler washer and tester, fire extinguisher; water columns, and whistles.—Represented by F. C. Davern, William Brumble and J. Brandt.

National Boiler Washing Co., Chicago.—Literature.—Represented by F. W. Gale, F. S. Wichman and C. C. Lance.

National Malleable Casting Co., Cleveland, Ohio.—National Railway Devices Company, Chicago.—Vertical fire door; Radial fire door. Represented by Jay G. Robinson and E. J. Gunnison.

National Tube Company, Pittsburgh, Pa.—Superheater tubes

applied in tube sheet, small 2-in. and 2½-in. tubes.—Represented by George N. Riley, J. T. Goodwin, J. W. Kelly and P. J. Conrath.

New York Air Brake Co., New York.

Ohio Injector Co., Chicago.—Injectors; flange oiler; lubricator; low water alarm; water glass protector, and drifting valve.—Represented by A. C. Beckwith, F. W. Edwards, R. M. Barber and F. B. Farnsworth.

Okadee Co., Chicago.—Blow-off valve; front end hinge; automatic cylinder cock, and tank hose coupler.—Represented by A. G. Hollingshead, G. S. Turner, J. S. Lemley, J. M. Monroe, W. H. Heckman, and F. G. Zimmerman.

Parkesburg Iron Company, Parkesburg, Pa.—Sections of charcoal iron tubes. Represented by L. P. Mercer and J. F. Wiese.

Pilot Packing Co., Sea Cliff, N. Y.—Packing.—Represented by Joseph Sinkler.

Pyle-National Company, Chicago.—Model of Young valve gear; turbo headlight generators; cast metal, cast aluminum and cast iron headlight cases with glass reflector; cast aluminum flood light cases; back-up lamps. Represented by C. P. McGinnis, T. P. McGinnis, W. T. Bretherton, R. L. Kilker, George Haas, J. L. Reese, O. W. Young, William Miller and J. Will Johnson.

Railway Review, Chicago.—Represented by H. A. Smith, A. E. Hooven and J. E. Gougeon.

Sargent Company, Chicago.—Water column; water glass cocks; two seat gauge cock; iron clad protectors; gauges; blower valve and gaskets. Represented by George H. Sargent and L. L. Schultz.

Simmons-Boardman Publishing Co., New York.—*Railway Age*, *Railway Mechanical Engineer*, *Locomotive Cyclopaedia* and *Car Builders' Cyclopaedia*.—Represented by L. B. Sherman, C. B. Peck, B. J. Wilson, J. M. Rutherford and Homer Beach.

The Smith Automatic Adjustable Hub Plate Company, Chicago.—Locomotive adjustable hub plate. Represented by A. J. Sams.

Standard Steel Works Co., Philadelphia, Pa.—Literature and photographs.—Represented by C. R. Riddell, N. E. Baxter, C. H. Gaskill and F. A. Neely.

Sunbeam Electric Manufacturing Co., Evansville, Ind.—Airtight headlight.—Represented by H. A. Varney, J. Henry Schroeder and W. T. Manogue.

Superheater Co., New York.—Exhaust steam injector; feed water heater, and method of repairing superheater.—Represented by F. A. Schaff, R. M. Ostermann, G. E. Ryder, R. R. Porterfield, Bard Browne, W. A. Buckbee and all district representatives.

Talmage Manufacturing Co., Cleveland, Ohio.—Low water alarm; steam chest lubricating drifting valves; blow-off valves; hammer feed grease cup, and ratchet band brake.—Represented by F. M. Roby, H. B. Thurston and L. Sprague.

The U. S. Metallic Packing Company, Philadelphia, Pa.—Piston, valve stem and air pump packing; sanders and bell ringer; shaker bar and oil cup. Represented by R. A. Light, J. T. Luscombe and H. E. Hyslop.

Vapor Car Heating Co., Chicago.—Steam heat pressure valve; steam heat stop valves.—Represented by E. C. Post and N. F. Burns.

Harry Vissering & Co., Chicago.—Sander; bell ringer; metallic piston rod and valve steam packing.—Represented by Harry Vissering, G. S. Turner, Charles R. Long, Jr., W. H. Heckman, J. S. Lemley, J. M. Monroe and F. G. Zimmerman.

Westinghouse Air Brake Company, Pittsburgh, Pa.—Air cylinder oil cup; brake cylinder packing cup; compressor air strainer; brake cylinder gaskets. Represented by S. G. Downs, J. B. Wright, C. J. Ohmstead, J. S. Y. Fralich, F. H. Parke, L. Wilcox, F. B. Farmer, C. D. Foltze, V. Villette, F. B. Johnson, H. H. Burns, W. M. Sleet, A. G. Houston, A. L. Berghane, L. M. Carlton and E. R. Fitch.

Worthington Pump & Machinery Corp., New York.—Sectional model of locomotive feed water heater.—Represented by D. R. Coleman and J. M. Lammedee.

Over a Million Cars Loaded

WASHINGTON, D. C.

THE NUMBER of cars loaded with revenue freight crossed the million mark in the week ended October 21 for the first time since October, 1920. The total was 1,003,759, as compared with 964,811 in the corresponding week of last year and 1,008,818 in the corresponding week of 1920. The increase as compared with the preceding week was 20,280. The loading was still, however, below the record set in the peak week of October, 1920, when 1,018,539 cars were loaded. Although coal shipments are still being given priority, the large increase in loading as compared with last year is due to the heavy movement of other commodities. All classes of commodities show increases as compared with the corresponding week of 1921 except coal, the loading of which was nearly 19,000 cars less than last year, and merchandise, the loading of which was over 6,000 cars less than last year. Increases as compared with 1920 were shown in

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, OCTOBER 21, 1922

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded		
										This year 1922	Corresponding year 1921	Corresponding year 1920
Eastern	1922	10,407	3,689	60,682	1,947	6,074	5,530	64,739	99,244	252,312	.....	.....
	1921	11,318	3,822	57,565	2,180	4,563	2,484	64,962	93,576	.....	240,470	254,238
Allegheny	1922	3,734	3,681	54,081	5,290	3,412	8,432	48,144	78,737	205,511	.....	.....
	1921	2,661	3,516	60,237	2,523	3,317	5,936	48,309	64,702	.....	191,201	209,948
Pocahontas	1922	218	597	18,505	352	1,523	37	5,725	3,697	30,654	.....	.....
	1921	233	457	25,590	202	1,207	.....	5,743	4,166	.....	37,598	37,291
Southern	1922	4,129	2,790	24,010	1,095	20,004	1,207	38,867	45,903	138,005	.....	.....
	1921	3,563	2,351	28,511	617	17,148	460	40,810	41,323	.....	134,783	131,733
Northwestern	1922	17,268	9,165	10,830	1,428	15,021	27,801	27,891	42,513	151,917	.....	.....
	1921	15,099	10,381	12,576	717	11,857	12,509	29,057	41,780	.....	133,976	164,101
Central Western	1922	12,218	16,615	21,513	355	7,506	2,213	31,173	61,418	153,011	.....	.....
	1921	13,023	15,772	25,090	216	7,526	739	32,537	59,106	.....	154,009	141,057
Southwestern	1922	5,706	3,936	7,150	164	6,804	248	15,258	33,083	72,349	.....	.....
	1921	4,546	3,548	5,926	165	8,037	461	16,602	33,489	.....	72,774	70,450
Total Western districts..	1922	35,192	29,716	39,493	1,947	29,331	30,262	74,322	137,014	377,277	.....	.....
	1921	32,668	29,701	43,592	1,098	27,420	13,709	78,196	134,375	.....	360,759	375,608
Total, all roads.....	1922	53,680	40,473	196,771	10,631	60,344	45,468	231,797	364,595	1,003,759	.....	.....
	1921	50,443	39,847	215,495	6,620	53,655	22,589	238,020	338,142	.....	964,811	.....
Increase compared	1920	39,480	35,187	225,950	15,587	59,754	73,022	210,354	349,484	.....	.....	1,008,818
	1921	3,237	626	.....	4,011	6,689	22,879	.....	26,453	38,948	.....	.....
Decrease compared	1921	.....	.....	18,724	.....	.....	.....	6,223	.....	.....	.....	.....
	1920	14,200	5,286	.....	.....	590	.....	21,443	15,111	.....	.....	.....
Decrease compared	1920	.....	.....	29,179	4,956	.....	27,554	.....	.....	5,059	.....	.....
	1922	53,680	40,473	196,771	10,631	60,344	45,468	231,797	364,595	1,003,759	964,811	1,008,818
October 21	1922	52,492	39,141	196,926	10,208	59,727	46,362	226,123	352,491	983,479	910,529	1,018,539
	1922	50,553	39,359	189,312	9,880	57,844	47,439	228,515	345,267	968,169	899,681	1,011,666
October 7	1922	52,129	39,830	189,349	9,456	58,742	49,777	234,517	354,581	988,381	904,831	992,283
	1922	52,379	36,896	187,896	8,671	58,853	49,587	234,371	344,638	973,291	873,641	1,008,109

Compiled by Car Service Division, American Railway Association.

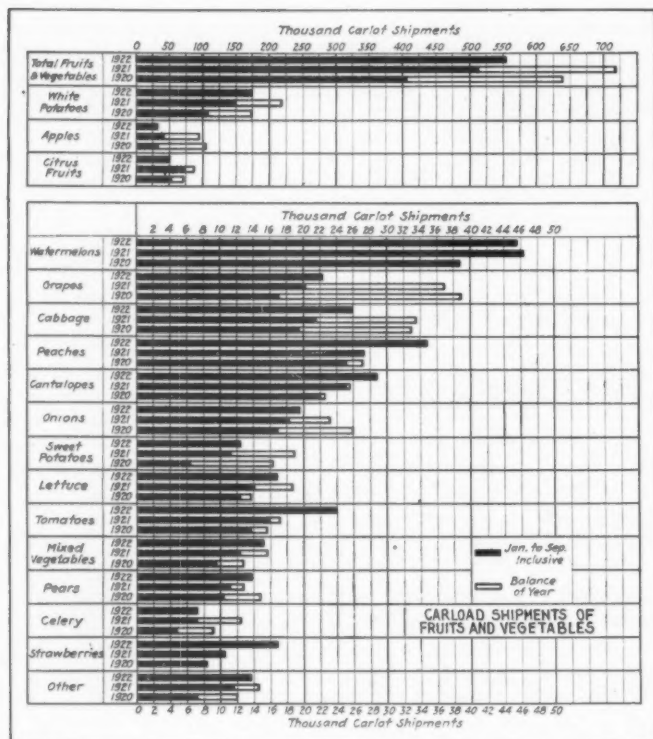
all classes of commodities except coal and coke, while there were increases as compared with the previous week in all classes except coal and ore. In the Southern, Central Western and Southwestern districts the loading exceeded that of 1920.

Fewer freight cars are now in need of repair than at any time since March 15, 1921, according to reports compiled by the Car Service Division. On October 15, the latest date

available, 270,045 freight cars, or 11.9 per cent of the cars on line, were in need of repairs. This was a decrease of 21,609 cars compared with the total on October 1, at which time there were 291,654, or 12.8 per cent. This also was 54,538 fewer than on July 1, the date on which the strike of railway shopmen began. On October 15, 1921, there were 354,996 freight cars, or 15.5 per cent, in need of repairs.

Freight cars requiring light repairs numbered 55,123 cars on October 15 last, a decrease of 5,966 compared with the total on October 1. Cars in need of heavy repairs totaled 214,922, or a decrease of 15,643 within the same period. Every district on October 15 showed a decrease compared with the total not only on October 1, but also on July 1.

The freight car shortage increased from 156,309 for the week ended October 15 to 166,349 for the period from October 15-23.



Shipments of Fruits and Vegetables; 1922 Compared with Previous Years

Chart compiled by Car Service Division from statistics collected by the Bureau of Agricultural Economics of the Department of Agriculture.

The solid black lines show total loading to date in 1922 compared with the equivalent period for each of the two previous years. Where the 1921 and 1920 lines are extended in outline form, it represents the extent of the subsequent movement of these commodities for the remaining three months of the year. Comparing the length of the black area with that of the outline it can be seen just what proportion of the year's movement was completed by the end of September.

It will be noted that the total movement to date this year has exceeded last year by approximately 40,000 cars, and 1920 by 140,000. Almost without exception individual commodities show a greater movement this year than for the corresponding period of the two previous years.

This chart gives a graphic picture of the extent to which traffic in fruits and vegetables is increasing year by year.

Coal Situation Fairly Satisfactory

WASHINGTON, D. C.

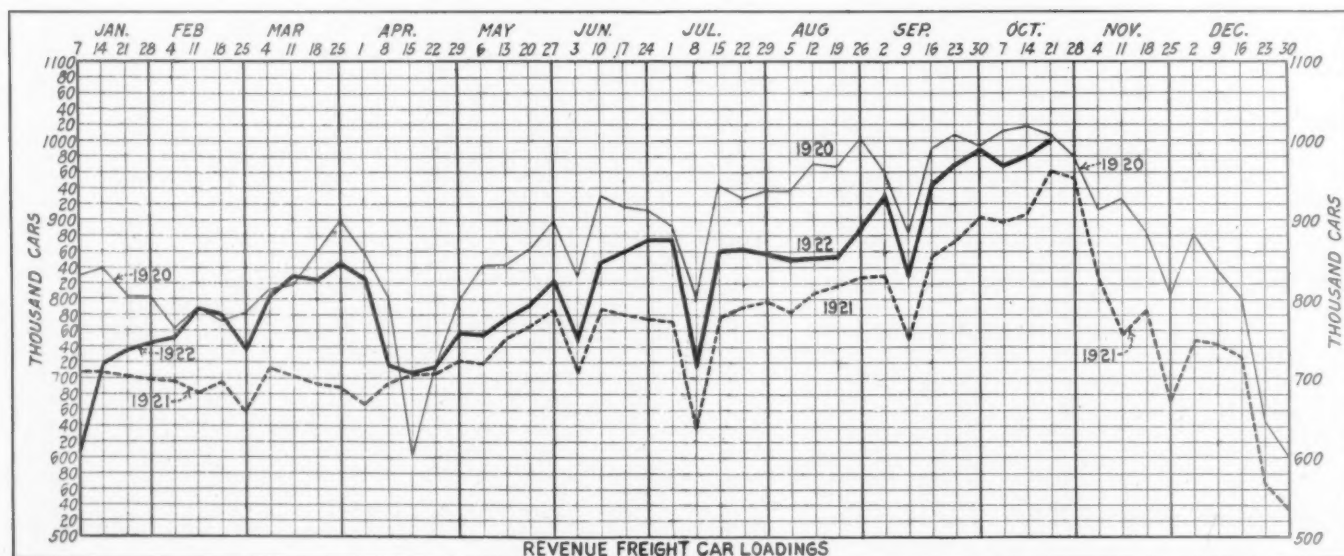
"INDUSTRIAL USERS of coal are beginning to accumulate some reserves, and the general steam coal situation may now be regarded as fairly satisfactory," said Federal Fuel Distributor C. E. Spens in a statement summarizing the present coal outlook. For the past few weeks the average spot price for all grades of bituminous coal has steadily declined, while production figures have mounted. Mr. Spens' statement is, in part, as follows:

A canvass of the situation, now being made by this office, indicates that storage of coal by industry is increasing, although industrial buyers have been urged to purchase only sufficient coal for current requirements, in order that no consumer might be distressed, and particularly that production and transportation of coal for domestic needs might not be jeopardized. The present greatly increased production of bituminous coal is, however, possibly sufficient to permit of some reserves even under the prosperous conditions of industry prevailing today.

The act creating the office of federal fuel distributor became effective September 22. Production of bituminous coal since that time has been as follows:

	Tons
For the week ended September 30.....	9,822,000
For the week ended October 7.....	9,736,000
For the week ended October 14.....	10,021,000
For the week ended October 21.....	10,350,000
For the week ended October 28.....	10,500,000

The situation to-day so far as steam, or industrial, coal is concerned, is fairly satisfactory. There are, of course, individual cases where, due to lack of transportation, more or less difficulty is encountered in securing sufficient supplies with regularity and "spot" coal purchases have to some extent been necessary, but,



generally speaking, the present steam coal situation is not a matter of grave concern.

In the greater part of the country conditions as to domestic bituminous coals are quite comfortable though there are still some sections where available supplies would quickly vanish in the event of inclement weather, and with consequential diminution in transportation. The northwest territory, for instance, served largely by lake transportation, will need for all purposes approximately four million additional tons before the close of navigation, in addition to all rail movement from Illinois, Indiana, etc., to care for its requirements until April 1. Barring unexpected difficulties, with dumpings at Lake Erie ports averaging at least one million tons per week, it is anticipated that these requirements will be accomplished.

In Illinois the available supply on hand is low, due largely to the fact that a very considerable proportion of the coal mined within the state and adjoining territories has been, and is, moving all-rail to the northwest to supplement the Lake allotment from eastern fields. It is important that far distant communities be served at this time, nearby communities can, of course, be taken care of with little delay.

In the matter of prices of bituminous coals, the following figures will give an idea of the present trend. For the week ended September 23, the average spot price of all grades of coal was \$5.06 per ton.

	Per ton
For the week ended September 30.....	\$4.89
For the week ended October 7.....	4.60
For the week ended October 14.....	4.45
For the week ended October 21.....	4.26

During the past few weeks the above average prices have been held up by the comparatively higher prices received for domestic coals, the margin between "run-of-mine" and "lump" coals having in some instances been abnormally large.

The anthracite situation differs from the bituminous. The

production today is practically at the peak and due to the strike, the production this season which ends with March 31, 1923, will probably not greatly exceed 60 per cent of that of last season. The plan for distribution of this season's production contemplates a pro rata distribution among last year's trade. This season's production cannot possibly, therefore, equal the demand, and necessarily other fuels must to some extent be substituted.

The most serious territorial situation as to anthracite domestic coal is, like the bituminous, in the northwestern states served by the lakes. The anthracite lake program calls for approximately two million tons, and up to date approximately only five hundred and fifty thousand tons have been shipped, in addition, there has been some movement all-rail, although this amount has not as yet reached an appreciable proportion. If normal lake conditions obtain, it is expected that shipment by lake will continue until at least the first of December, and since it will not be possible during this remaining period to complete the allotted proportion for shipment by lake, operators have been urged to supplement the lake movement by immediate commencement of all-rail shipments with due regard, of course, to necessary distribution to other sections of the country accustomed to the use of anthracite.

The average daily loading of anthracite during the last 18 days of September, 1922, (after the termination of the miners' strike), was 5,007 cars. The average daily loading in October this year up to and including the 26th instant, was 6,254 cars, as compared with 5,853 in October, 1921, and 5,910 in October, 1920. This indicates intense application by all interests.

The necessary distribution of coals is dependent principally upon two factors at the present time: climatic conditions and transportation. The latter factor is to a large extent dependent upon the former, although it should also be remembered in this connection that the transportation lines of this country have not yet fully recovered from the ravages of the recent railway strike, and that in addition, the offerings of tonnage of all character are almost at the peak in the history of the carriers.

Automatic Train Control—a Signal Engineer's View*

Lucid Analysis by a Veteran Signal Engineer—Possibility
of Saving Expense of Wayside Signals

By Thomas S. Stevens

Signal Engineer, Atchison, Topeka & Santa Fe System

IF WAYSIDE signals are to be used and the only purpose of automatic train control is to check the performance of the signals and the actions of the enginemen, those intermittent devices which have only two positive indications, with a speed control which is only local and momentary, may work up into first-class devices. By positive indications I mean those which are not dependent on time element devices or on the speed of the train.

If, however, we propose to make automatic train control pay by developing it into a complete signaling scheme, something more than is provided by these devices will probably be necessary. It would appear that at least three indications or controls are required—stop and proceed, of course, with the addition of a low-speed control of some character which should be continuous in its effect until replaced by a proceed indication.

Whether wayside signals are used or not, it is reasonable to suppose that train control will undoubtedly be the governing factor eventually. Because of the necessities it seems safe to assume that the ultimate development will tend to leave the control of the train in the hands of the enginemen, rather than that the actual brake application for the different indications will be made automatically. The probable function of the automatic train control will be to check the engineman by stopping the train if proper procedure is not taken. If this is finally proved to be true, it seems essential

that information should be provided in the cab so that the engineman may be advised of the condition of the automatic train control apparatus and so be able to control the speed of the train properly in order to avoid being checked. This information may be given through the medium of a signal, whistle, or indicator of some kind; but any of these will, in effect, be a repeater of the wayside signal. Except for the fear of failures during the first few days of development, there seems to be no justification for the duplication of indications which will result if wayside signals are used as well as the necessary cab indications which would appear to be necessary in any case whether wayside signals are installed or not.

Developing Train Control

It would seem advisable for a number of railroads to approach this subject with the idea of developing something which would take the place of wayside signals as well as provide an automatic check on the actions of the engineman. This treatment is attractive from many standpoints:

- (1) It would, of course, be far cheaper to install without wayside signals than with them.
- (2) The cost of operating will be less because the necessity for holding signals clear during 24 hours regardless of whether the protection is needed or not will be eliminated and only the necessary power to protect a train properly which is actually operating over the railroad will be used.
- (3) The question of a background for the signal indication will be solved, because the indication will be given in the cab.
- (4) Signaling against traffic on double or multiple track rail-

*Paper read before the Society of Engineers at Chicago, October 23. Other papers read at that time were reported in the *Railway Age* of October 28, page 805.

roads can be undertaken with far less cost because the clearance problem is eliminated.

Advantages of Train Control

Railroading generally will not be as flexible with automatic train control because the speed of operation will be prescribed, but this prescription will be of the same extent regardless of whether wayside signals are used or not. Granting that automatic train control is successful, there seem to be many advantages which can be obtained from its use. If proper analysis is made of the effect of signal indications given by automatic signals, it will be found that the only indication which protects the rear end of a train is that which prescribes some form of low speed after stopping at an automatic signal. The stop in itself has never been of any use. Operating officers have been afraid to eliminate the stop because of the fear that a proper low speed would not be maintained without the stop. Probably the fear was justified, but with a controlling device which definitely takes care of the proper rate of speed it would seem that all stops for automatic signals could be eliminated.

In completely signaled territory rear flagging has been retained due to the same fear with reference to the action of the engineman, even after passing an automatic signal at stop in the proper way, and this fear is natural because of accidents which have happened after a train has actually stopped at a signal or picked up a flag. Under automatic train control it would seem possible to eliminate rear flagging or at least to shorten the distance, because the speed of the train will be taken care of definitely and positively by the automatic control.

Problems Involved in Installations

From an engineering standpoint the problems involved are many and varied. Considerable experience has been obtained from some of the installations already made with reference to the possibilities of mounting certain classes of devices properly on engines. The experiments, however, have not covered a sufficient length of time, nor have they been of a sufficiently diversified character to allow of definite suggestions as to the solution of the engineering difficulties involved.

Ramp devices seem to present the least difficulty in connection with the methods necessary to provide the requisite indications and controls. A simple change of polarity is all that is needed to bring about the different speed controls. The electrical problems involved can easily be understood by any signalman who has maintained automatic signals. The problem in connection with this type of device seems to be the integrity of contact during inclement weather and the proper construction and installation of the ramps so that impact shocks will be taken care of properly and the ramps securely protected against possible damage by dragging equipment.

The questions of clearances and interferences with the safety of employees seem to present subjects for study.

With the inductive devices which provide full clearance there is the problem of insulation which has always been a difficult one to take care of with apparatus which is practically underground. Most of the inductive devices involve principles which will require additional education of employees. With all of the ramps and intermittent inductive devices there will be a big problem with reference to the maintenance of track because all of these devices interfere more or less with the present scheme of taking care of the roadway structure.

The installation of this type of device will have to be made very carefully because no really good way seems at present to have been devised to take care of derangement of the apparatus. By somewhat complicated methods the actual removal of a ramp or intermittent inductive device can be protected against, but at the present time it seems

possible for sufficient derangement to occur to render the device inoperative without any check being made.

With the continuous control devices which use central energy, the big problem seems to be the integrity of the power supply. This problem exists at the present time in connection with all installations of signals controlled from a central point, but failures of this character where wayside signals are involved can be taken care of by orders and, therefore, business can be moved more readily than will be possible, perhaps, under automatic control. In at least one of the devices an amplifier is necessary, which is a more or less delicate instrument. The installation of such a device on an engine will require careful study to protect it against the shocks which are bound to occur.

Air Brake Control Is the Big Problem

After all is said and done about the transfer of an impulse from the track to the engine, the big problem appears to be the proper control of the air brake apparatus. Whether the air brake control can be actually made automatic or whether it must always be a check on the actions of the enginemen, is the one phase of automatic train control which will require the most study during the period of development. If we endeavor to replace the flexibility of human action by something which is automatic it will necessitate the same brake application regardless of the length of the train, grades, curves, or the condition of the weather and the rail. It would seem probable that the final development would be to provide proper indications as to the allowable speed, with the requirement that the engineman should keep within certain limits under certain conditions to prevent the automatic train control having any actual effect on the air brakes themselves. Another serious problem is the release of the air brakes. Some of the questions on train control about which there is a vast difference of opinion are as follows:

Whether intermittent or continuous control will prove more efficient and flexible.

Whether the control points of intermittent devices should be located at the signal or at braking distance from the signal.

Whether the actual stopping of the train should cause the air brake control to be set to a prescribed low speed and thus a positive proceed indication be required.

Whether an indication should be provided on side tracks which would inform the engineman regarding the occupancy of the main line.

Whether simple apparatus with overlaps is preferable to slightly more complicated devices which would either decrease the overlaps or eliminate their necessity.

Whether it is desirable to introduce the necessary complications to insure that the indications of the signal should be properly checked by the automatic train control, and those of the automatic train control in turn checked by the signals.

Automatic train control will probably be subject to the same extent of mechanical failures as is experienced with other automatic devices. Man failures will be transferred from the human beings operating trains or signals to other human beings who are responsible for its manufacture, installation and maintenance. Whether train control will prove more effective than past schemes will be dependent on the care and study which is accorded its manufacture, installation, maintenance and operation.

Discussion

H. R. Safford (vice-pres., C. B. & Q.): Probably no device relating to safety and operation in railroading has been approached with as much caution as train control. It was hard at first for railroad men to realize that a substitute should be provided to operate when the human mind fails. We don't want to think that a mechanical substitute should be provided to replace human intelligence. The problem is to get a device that is durable and reliable with the organization available for its maintenance. It is my thought that the highest type of construction and highest type of care will be required to obtain a device to operate successfully.

C. A. Dunham (s'g. engr., G. N.): What is required in train control today is a device to bridge the gap between the automatic block signal system and the air brake device on a moving train. There is a great difference between speed control and the simple automatic stop. Some roads, no doubt, have traffic and speeds which warrant the adoption of a speed control device. However, this does not prove that such conditions prevail on all of the 49 roads listed in the commission's order and that all of these carriers should be required to install a system of this kind.

F. J. Sprague (Sprague Safety Control and Signal Corporation): Train control will offer a greater track capacity on one or two tracks with or without signals, normal clear or normal danger, with steam or electric propulsion. Track capacity will also be increased by operating trains either way on both tracks. The big problem of train control is the maintenance of the apparatus. It is our hope that the train control apparatus will not be required to operate except at infrequent intervals; normally the engineman can control the train with a nicety of manipulation and judgment of train length, air supply, etc., that cannot be duplicated by a mechanical device. Train control, if properly engineered, may tend to increase rather than decrease track capacity. The system should be a friendly mentor and guide for the engineman, aiding, not unnecessarily opposing, him, and a thoroughly reliable but unobtrusive partner in the operation of his engine, which, while interposing an effective shield between him and disaster, will leave, within all proper limits, the handling of the train subject to his judgment.

A. G. Shaver (Regan Safety Device Company): Installations of automatic train control have been in service on railroads under practicable operating conditions sufficiently long to demonstrate their usefulness and reliability. The fact that a train can be safely stopped automatically or can have its speed efficiently controlled automatically is not debatable in view of the records for such performances extending over a period of several years under the variety of operating conditions existing on the usual railroad. That I may not be misunderstood, I would define the essentials of automatic control to be: Means for automatically stopping a train; means to permit it to proceed after being stopped, and means to restrict its speed under certain conditions.

In its application and use automatic train control involves two different engineering departments of the railroad, neither of which usually has any particular interest or part in the business of the other. It has not been necessary for a motive power man to know how to signal a railroad in order to build and maintain a locomotive, nor has it been necessary for a signal man to know much about a locomotive in order to equip a railway line with a signal system. With automatic train control it is different, both the motive power and the signal departments are concerned, and the lack of a full appreciation of this fact, perhaps, has been quite a drawback in train control progress.

Any successful system of automatic train control must be simple in design and well constructed. The use of fragile and delicate apparatus and equipment, the life of which is not accurately known, is to be avoided. The careful railroad will use a system of demonstrated practicability; one comprising equipment which the existing skilled forces of the railroad can readily install and maintain. It should be borne in mind that those systems which will make the engineman unnecessary and which will do everything but talk are a long way from realization.

It has been shown that for systems already installed and in regular operation the locomotive equipment can be looked after by the regular roundhouse forces, and there is nothing about the track appliances which a good maintainer's helper cannot do. To get good service it is, of course, necessary to understand the working of the apparatus and its diseases in operation, but a knowledge of these is soon acquired, since

the maintaining forces are already familiar with railroad equipment of a similar sort.

The major part and the important part of the train control system is the equipment on the locomotive. It is essential that it be properly applied and that it be given the same high order of inspection and maintenance as that now given by most railroads to their signal systems.

Although, generally speaking, that part of the train control system located on the track is simple and easily installed and maintained, there is the problem of its proper application to best serve the operating and traffic conditions of the railroad. No matter how good and efficient a train control system may be, it will not best serve a railroad if improperly applied. The important function of a train control system is to keep trains moving safely, and already there are systems which will do this. What railroad would be content to have its trains automatically stopped in such impossible places as on bad curves, steep up-grades, or on important street crossings, or to have them subjected to such interruptions as might occur from the signalman testing his circuits, the trackman trying his switches and the like?

A. J. Brookins (Burdette-Brookins Train Control System): In my opinion the transmission of the controlling impulse from the roadway to the locomotive is far less important than the actual operation of the device used to control the air brake equipment. There should be more latitude in the selection of equipment. Those desiring to use the simple stop should be allowed to do so; if others wish the speed control, let them try it. The audible signal also should be installed for an extensive trial. In this way a varied experience would be offered and a middle ground of development established. By such a program of trials and experiments a multitude of difficulties in the progress of train control would be eliminated.

THE CHICAGO, MILWAUKEE & ST. PAUL has named the dining car on its "Pioneer Limited," which is operated between Chicago and Milwaukee, "Dan Healey," in honor of its popular dining car conductor who served on this run for many years and who died last month.



Kadel & Herbert, N. Y.

Hanging Rock at Clifton, Alaska



Thomas DeWitt Cuyler

Death of T. DeWitt Cuyler, Executives' Chairman

Chairman of Association of Railway Executives Found Dead
in Business Car on Return from Trip

THOMAS DEWITT CUYLER, chairman of the Association of Railway Executives, was found dead in his state-room in the business car of President Rea of the Pennsylvania Railroad, at Philadelphia on the morning of Thursday, November 2. Mr. Cuyler was 68 years old. He had been chairman of the Association of Railway Executives since May 1, 1918, a director of the Pennsylvania Railroad since May 10, 1869, and was also a director in a number of other railroads and other companies.

Mr. Cuyler had just returned from Rochester, N. Y. He was in that city on Wednesday and made an address before the Chamber of Commerce on the subject of "A Constructive Public Policy Toward Our Railroads."

By the death of Mr. Cuyler not only the railways but the entire nation sustains a heavy loss. He succeeded Frank Trumbull as chairman of the Association of Railway Executives at a crisis in the transportation affairs of the country. The railways were under government control and were incurring large deficits. Public sentiment favored their return to private operation. The very difficult problem was presented of formulating and securing the adoption of legislation under which they could be returned to private operation on conditions which would make possible restoration of their earning capacity. It was essential that the railways should secure the support of business interests, public men and the public for a reform of federal railroad laws. The railroads for some years in educating public sentiment and advocating plans for constructive railway legislation had had the statesmanlike leadership of Frank Trumbull, but he was no longer available.

It was a rare piece of good fortune that Mr. Cuyler was available to take up the work that Mr. Trumbull had begun and that he was found willing to do so. He was a man of large fortune. As a director for years of the Pennsylvania and the Atchison, Topeka & Santa Fe he was familiar with the railroad situation in both the East and the West. He had diplomatic gifts of the highest order which enabled him to win a hearing and sympathy for his views from important and influential people in all walks of life. He was not only a man of unusual ability but also a successful lawyer and therefore knew how to present the railways' case on all occasions logically and effectively. He was a natural leader of men, and these qualities of leadership enabled him to hold the railway executives together to get them to harmonize their views and present almost a united front even when there were very wide differences of opinion among them regarding questions of railway management and railway regulation. He was a superb presiding officer and he had to exercise great skill and firmness as a presiding officer at many meetings of the Association of Railway Executives when decisions regarding important matters had to be reached in spite of wide differences between different groups of executives.

While Mr. Cuyler was chairman of the Association of Railway Executives, the Transportation Act was passed; the railways were returned to private operation; the large advance in rates of 1920 was made; the struggle of the railways with the labor unions over the question of national agreements occurred; the railways passed through the historic crisis due to traffic congestion in 1920 and through the more serious financial crisis due to the great decline in their business in 1921 and, finally, they fought out the reduced rates case before the Interstate Commerce Commission and the reduced wage cases before the Railroad Labor Board. The Association of Railway Executives determined the pol-

icy of the railways in respect to all these matters and there were times when the differences of opinion between railway executives were so great that it looked as if it would be impossible for them to agree upon policies. That in most cases they finally did agree and that usually the policies adopted were sound were largely due to Mr. Cuyler's qualities of leadership and to the confidence inspired by his unfailing judicial fairness and his statesmanlike presentation of the various problems to be disposed of.

There has been a strong tendency recently among railway executives to believe that the Association of Railway Executives has been playing too large a part in railway affairs and in consequence many functions previously delegated to it have been transferred to other organizations. Before this process had begun, however, Mr. Cuyler had done a great constructive work for the railways for which he will always be held in grateful memory by all the railway executives of the present generation.

No reference to his work would be complete which did not mention the fact that as chairman of the Association of Railway Executives he never received a dollar of compensation. As a man of large business interests and especially as a large owner of railway securities, he was very anxious to help solve the railroad problem, but nobody who knew him will question that in the main his work for the railways was a labor of love performed by him because he believed it to be his duty as an American citizen.

Personally, he was one of the most approachable and charming of gentlemen. He had a powerful will, a dominating mind and tireless energy but in other respects he was the exact opposite of those men having similar qualities who are sometimes called "rough diamonds." He was indeed one of the gentlest and kindest of men as well as a very able lawyer, business man and leader of men.

Samuel Rea, president of the Pennsylvania, said the following Thursday concerning the death of Mr. Cuyler:

"Mr. Cuyler's sudden death is a terrible shock. Knowing him so intimately as I have for many years, I had the warmest affection for him. His legal training, his intimate knowledge of railroad affairs and finance and his keen powers of observation gained through years of service and contact with men of affairs all over the world qualified him as a business man of the ripest experience. His death is a great loss not only to the Pennsylvania Railroad Company, in which he was a director, but to all the railroads in the country, because of his position as chairman of the Association of Railway Executives and his able and impartial supervision of their affairs in the most difficult period in their history.

"No personal sacrifice was ever too great for him to make to advance the interests of the railroads. Among his own friends in the suburbs of Philadelphia, where he lived, his delightful personality and generosity and personal service to the community will be greatly missed."

Thomas DeWitt Cuyler was born in Philadelphia, September 28, 1854. He was the son of Theodore Cuyler, who at the time of his death on April 5, 1876, was general counsel of the Pennsylvania Railroad. He received his preliminary education in the schools of Philadelphia and graduated from Yale in 1874 with the B.A. degree. He was admitted to the bar at Philadelphia in 1876, following which he engaged in the general practice of law, later making corporation law a specialty. He served as counsel for a number of large corporations.

In the earlier years of his business career much of his

work was in the West, taking him to Texas, California, New Mexico and other states. He was counsel for a number of Scottish and English development companies that had brought settlers to the West to open up new territories. This brought him in direct touch with railroad building, and he became acquainted with many of the problems of construction and financing.

From these connections he went directly into railroad work, and was elected a director of the Pennsylvania Railroad on May 10, 1899. He was a director in several railroads embraced in the Pennsylvania System, as well as of the Atchison, Topeka & Santa Fe; the New York, New Haven & Hartford; the Rutland; the New York, Ontario & Western; the Maine Central; the Long Island, and many others.

He was also a director of the Interborough Rapid Transit Company; the Equitable Life Assurance Society; the Bankers Trust Company; the Western Union Telegraph Com-

pany; the Guaranty Trust Company; the Metropolitan Trust Company; the United States Mortgage & Trust Company, and others.

He was counsel in the reorganization of the Asphalt Company of America, and engaged in many of the most complicated and important railroad reorganization plans in the last 25 years. He was also a trustee of Yale University.

Mr. Cuyler became chairman of the Association of Railway Executives on May 1, 1918, succeeding Frank Trumbull, chairman of the board of the Chesapeake & Ohio.

Mr. Cuyler's home was at Haverford, Pa. His favorite diversion was the raising of blooded cattle at his stock farm at Paoli, Pa., known as the White House Farm, where he had one of the largest pure blooded Jersey dairy herds in the country. Mr. Cuyler was a member of the Rittenhouse Club in Philadelphia, of the Society of the Cincinnati, and of the Century, University, Union, Recess and Bankers clubs of New York.

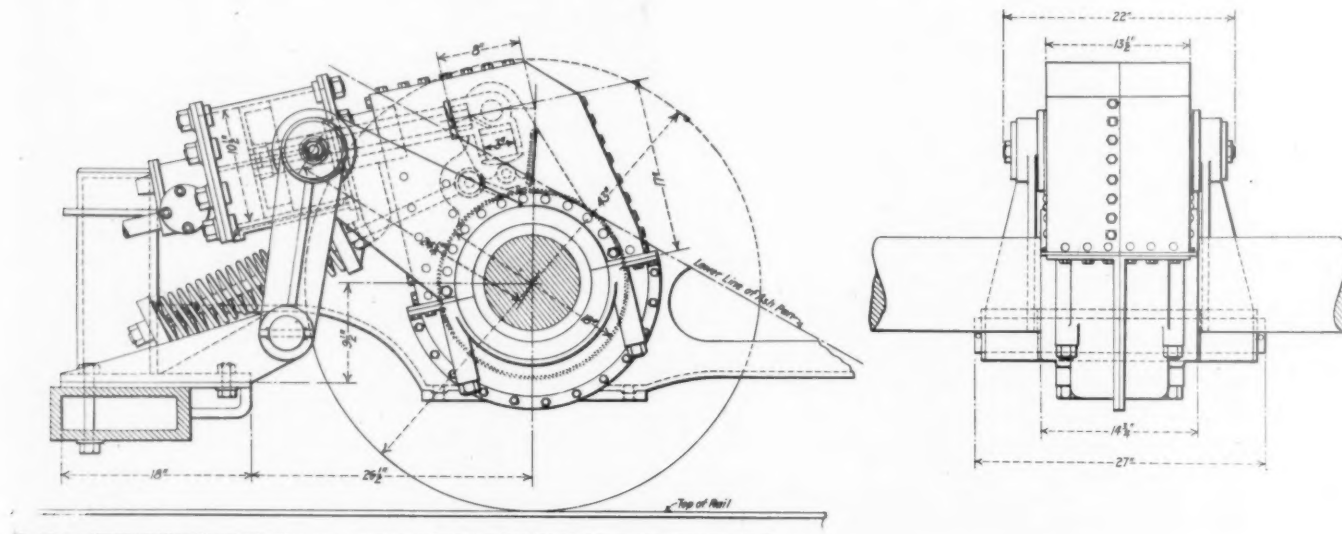
Construction of the Street Locomotive Starter

Device Designed for Application to Trailer or Tender Trucks to Give Increased Power at Starting

IN the past numerous efforts have been made to utilize the auxiliary carrying wheels of the locomotive as well as the driving wheels as a source of tractive force. Recently this practice has become more general with the adoption of boosters acting either on the trailing wheels or on the tender truck. The most recent development in appliances of this

rod has a crosshead on its outer end which engages a wrist pin carried by a pair of lever arms, which on their lower ends surround and are carried by a pair of collars formed on the ratchet wheel. A ratchet which engages the ratchet wheel is carried by and pivoted in the lever arms.

When the machine is idle and during the return stroke



Side and End Views of Starter as Applied to Locomotive Trailing Axle

type is the Street locomotive starter, originated by Clement F. Street, Greenwich, Conn., which was briefly described in the *Railway Age* of June 22, 1922, page 1710. The function of the starter is somewhat different from that of the booster as it is intended to assist the locomotive only when starting and is designed for use only at very low speeds. The method of application and details of construction of this device are clearly shown in the drawing.

The starter consists essentially of a heavy cast steel ratchet wheel pressed and keyed on an axle and driven by a steam cylinder. The piston of this cylinder is driven through its working or forward movement by steam pressure and through its return or backward movement by a spring. The piston

of the piston this ratchet is held out of contact with the ratchet wheel by a pair of springs attached to the lever arms. When steam pressure is admitted to the cylinder it passes through the hollow piston rod and through a hole in the crosshead to a small cylinder formed in the crosshead and forces the ratchet down into contact with the ratchet wheel and holds it there as long as the pressure exerted by the steam is greater than that of the springs which hold the ratchet up. The area of this small piston and the strength of the two small springs as well as that of the main spring are so proportioned as to result in the ratchet being forced down before there is any forward movement of the main piston and lifted before it begins its return movement. This

arrangement eliminates any dragging of the ratchet over the ratchet wheel and the unnecessary wear and noise which would result if this were permitted.

Steam is admitted to and exhausted from the main cylinder through a piston valve embodied in the rear cylinder head and controlled by a small slide pilot valve which is operated by a stop on the piston rod. This construction has been in use for many years in air brake compressors.

The weight of the forward end of the starter is carried by the axle through the lever arms and the weight of the rear end by the truck frame through a pair of cylinder supporting arms. The lower ends of these arms are carried by a pivot pin secured to the truck frame and their upper ends surround a pair of trunnions cast on the cylinder. These trunnions are tied to the axle through a housing which surrounds the entire front end of the machine. This method of supporting and tying eliminates any possibility of a spreading action between the truck frame and the axle and results in all strain transmitted to the truck frame by the starter being in almost a direct downward direction. As the only connection between the truck frame and the starter is pivotal it can move vertically in relation to the axle without hindrance or limit. Lateral movement of the axle is cared for by clearance between the hubs of the ratchet wheel and the lever arms. The casing is water and dust proof and carries lubricant for the bearing between the ratchet wheel and lever arms.

The face or bearing surface of the ratchet and ratchet wheel at the point of contact is four inches in width, the ratchet teeth are $\frac{1}{4}$ in. in depth and five in number.

The maximum pressure coming on these teeth is 32,000 lb. and while five teeth are provided, any single tooth has ample strength to withstand any strain which must be transmitted through this point.

The control mechanism has been reduced to the most simple form and consists of a one inch steam line leading from the dome of the locomotive to the cylinder of the starter with a throttle at the dome and a flexible joint at the cylinder. The throttle is opened and closed through the medium of a $\frac{1}{4}$ in. copper pipe leading from the throttle to a push button in the cab. When the push button is held down the machine will run and when it is released it will stop. This button can be operated by either the foot or the hand of the engineer.

A machine of this character must respond instantly when action is demanded and there is no time to wait for water to run out of pipes and cylinders. Therefore the throttle must be placed near the dome or source of steam supply and the cylinder and all steam passage must be free of water when the machine is not working. The Street starter has an automatic drain valve at the lowest point of the cylinder which remains open at all times when there is a pressure of less than about 10 lb. in the cylinder and closes automatically under any greater pressure. There are no pockets in the piping and when the throttle is opened the steam has an unobstructed passage to the piston. The throttle is of the double seated balanced type and is fully opened as soon as the button in the cab is pressed.

The starter exerts its greatest force when standing when it is needed most. It has no dead points and the tractive force exerted at the rim of the wheel is practically constant and the maximum permissible at all times when the machine is working.

The machine shown in the drawing is designed for application to a locomotive trailing truck having wheels 43 in. in diameter and carrying a weight of 52,500 lb. The tractive force exerted at the rim of the wheel with a $10\frac{1}{2}$ in. cylinder and 200 lb. boiler pressure would be 12,900 lb. When making applications to trucks requiring more or less power than this the cylinder and piston are made of different diameter but all other parts of the machine remain the same.

The machine illustrated is called the Type A; another smaller and less powerful, called Type B, is built for application to tender trucks. The starter is intended for moving a locomotive in one direction only, and if it is wanted for backing a second machine can easily be applied.

The device is primarily a locomotive starter and is cut out as soon as the train is well under way. In passenger service it will eliminate starting shocks resulting from taking slack. In freight service it will eliminate the need for taking slack in order to get a train under way and in so doing reduce break-in-twos, and draft gear and coupler failures.

The Problem of Highway Crossing Protection

L. S. BRACH, president of the L. S. Brach Manufacturing Company, Newark, N. J., has published a brief essay on this subject, in which he calls for decisive action to do away with the confusion now existing in this feature of railroad operation. He says, in part:

The vast increase in the number of motor vehicles on public highways in all parts of the country has led the general public to become deeply concerned regarding methods of safeguarding grade crossings. One of the great difficulties in arriving at a decision as to what is the best method of protecting crossings by an automatic device is occasioned by the very large number and varied types of devices that are on the market. These different arrangements are so puzzling to the average automobile driver that the need for some standardized form of indication is pressing. To attract attention under all conditions of light and weather, the signal should be different from all other signs or scenery along the highway. It should compel attention in most impressive terms by arresting the eye. It must deliver its message that will be understood in all languages "STOP! A TRAIN IS COMING." It should not merely excite curiosity but it should tell instantly to the subconscious mind of the driver the message that will cause him to bring his car to an instant stop.

It is now possible by taking a trip of not many miles, to pass flashing light signals at road intersections and curves and by traveling further along the highway to meet the same type or similar signal at railroad crossings. Still further along, we find swinging banners, swinging lights, stationary lights and stationary banners, arm type signals, or flashing signs. This condition is further complicated by the use of one of these types of signal for advertising purposes. On close investigation one finds a sign demonstrating the merits of some popular cigarette, or advertising the advantage of a certain bank. At another point the same general scheme may be used for the protection of a railroad crossing.

This condition demands immediate action. It demands unselfish action. It may be necessary for some of us either as manufacturers or as railroad men to abandon our pet ideas.

There is a great opportunity ahead. All signals should be impartially judged by competent engineers without connections or influence, neither having their own or friendly signal interests in view. The writer has been a pioneer in the development of a certain type of crossing signal but he feels that there is more to be gained in a standardization of the best signal by impartial judges whether that signal be manufactured by his company or by another company. Certainly, standardization should not be left to the choice of any individual interested in any type of crossing signals or methods of indication. The general public is entitled to more consideration than any manufacturer or individual and if the apparatus is given the opportunity of impartial choice, the public will be more likely to receive the benefit of a type of signal that will be seen, and when seen will be respected.

General News Department

The Delaware, Lackawanna & Western has reached an agreement as to wages and working conditions with all its mechanical department employees, represented by a new association known as the Lackawanna Association of Mechanics, Helpers and Coach Cleaners.

The Canadian Board of Conciliation in a majority report has ruled against reductions in wages for employees of the Canadian Pacific represented by the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees. A minority report, however, supports the position of the company. The company has announced its rejection of the findings of the majority report.

Twenty Million Loaded Cars

More cars were loaded with merchandise and miscellaneous freight during the first 40 weeks this year than ever before in the history of the railroads, according to a statement issued by the American Railway Association. In this period (nine months and seven days) 20,649,237 cars were loaded, an increase of 4.02 per cent over the corresponding period in 1920, and 13.87 per cent over the same period in 1921. Total loading of l. c. l. freight this year was 9,218,484 cars and of other freight 11,430,753 cars.

Freight Claims Adjusted More Promptly

The length of time required to adjust the average freight claim is not as long as some people would have the general public believe. According to the freight claim division of the American Railway Association great progress is being made in expediting the settlement of all claims, with conditions improving steadily. In 1921, about 54 per cent of all claims were adjusted within 30 days, and 77.5 per cent in 90 days, while for the first six months of 1922, records show that 64.7 per cent of all claims were settled within 30 days, 21.2 per cent in 30 to 90 days, and only 14.1 per cent of the total required more than 90 days to be settled.

P. R. R. Improvements at Pitcairn

The Pennsylvania has just completed and placed in service at Pitcairn, Pa., a modern 34-stall enginehouse with turntable at a cost of \$1,385,000. This terminal is located on the main line of the Central Region and is one of the key positions of the system in expediting the movement of through trains. Nearly 200 engines are handled daily. In addition to preparing the engines for service the heaviest of running repairs will be made at Pitcairn. Among the important facilities at the new enginehouse is the turntable, 110 ft. long and electrically operated. Each stall is 140 ft. long and so constructed that it can be completely enclosed. The structure is steam heated.

National Personnel Association Convention

The National Personnel Association will hold its annual convention at the William Penn Hotel, Pittsburgh, November 8-10. Several of the sessions will be of interest to railroad officers who are interested in improving the relations between the men and the managements. On Wednesday morning, November 8, there will be sessions on employment and labor turnover, trade apprenticeship progress and psychological tests and rating scales in relation to training; on that afternoon, sessions on economics for employees and health education. On Thursday morning there will be sessions on pension plans, shop training, job analysis and developing men for executive positions. The general session on Thursday afternoon will include a discussion of our immigration policy and its social and economic effects, and also on nation-wide co-operation in personnel work. On Friday morning, November

10, there will be sessions on industrial motion pictures, foreman training methods, personnel problems of small offices and employee publications. Friday afternoon will be given over to the consideration of local personnel groups and activities. On Friday evening there will be sessions on relations with engineering colleges and with industrial and public schools.

The address of the National Personnel Association is 20 Vesey street, New York.

Tennessee Central Shops Destroyed by Fire

The machine, blacksmith, tin and woodworking shops of the Tennessee Central at Nashville, Tenn., were destroyed by fire on October 27, with an estimated loss of \$80,000. Six freight cars were also burned and four locomotives damaged. The company intends to replace immediately both the shop buildings and the machinery which was destroyed within.

Iowa Wins Tax Battle

The Iowa state executive council won its tax valuation case against the Chicago Great Western and the Chicago, Rock Island & Pacific, when the United States Circuit Court, at a hearing held in Des Moines, Iowa, on October 30, refused the plea of the railroads for the issuance of an injunction preventing the state from collecting taxes based on the 1922 valuations.

The railroads had protested the per mile valuation set by the state executive council at a meeting in July. At that time the Chicago, Rock Island & Pacific was valued at \$30,400 per mile, a reduction of \$600 from the 1921 valuation, and the Chicago Great Western, at \$29,000 per mile, a reduction of \$1,000. The railroads claimed that the valuations were too high in comparison with the tax valuation set by the council upon Iowa farm lands.

Tentative Valuations

The Interstate Commerce Commission has issued tentative valuation reports in which it finds the final value of owned and used property as follows:

	Owned	Used
Sierra, 1916	\$2,072,899	\$2,077,276
South San Francisco Belt, 1916	69,498	84,425
Denison & Pacific Suburban, 1916	180,000	184,500
Nacogdoches & Southeastern, 1918	210,999	198,999
Cooperstown & Charlotte, 1916	260,000	531,427
Cumberland, 1917	386,203	404,203
Fairchild & Northeastern, 1916	884,746	.....
Birmingham & Northwestern, 1917	722,847	.....
Indiana Northern, 1916	29,310	55,250
Verde Tunnel & Smelter, 1917	571,101	.....
Carrollton & Worthville, 1917	100,000	.....
Eureka Nevada, 1917	35,762	599,762
Yreka, 1917	103,142	.....
Washington, Idaho & Montana, 1917	2,581,294	2,582,836
Keesville, Ausable Chasm & Lake Champlain, 1916	113,619	.....

Railroad Topics at A. S. M. E. Annual Meeting

L. F. Loree, president of the Delaware & Hudson, will be one of the speakers at the Economic Forum to be held in connection with the annual meeting of the American Society of Mechanical Engineers in New York, December 4-7. Other speakers at the forum will include E. M. Herr, president of the Westinghouse Electric & Manufacturing Company, whose topic will be The Human Problem in Industry; Doctor W. C. Mitchell and Professor H. R. Seager of Columbia University, and Dean Dexter S. Kimball of Cornell University, president of the society.

Notable among the reports to be presented will be that by the Committee on Training for the Industries, covering recent advances in correspondence work in extension schools, industrial training schools, and training in the works. Among the professional sessions will be one held by the Railroad Division, which will be presided over by the new chairman of the division, James Partington, of the American Locomotive Company.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

- AIR BRAKE ASSOCIATION.**—F. M. Nellis, 165 Broadway, New York City. Next convention, May 1-4, 1923, Denver, Colo. Exhibit by Air Brake Appliance Association.
- AIR BRAKE APPLIANCE ASSOCIATION.**—J. F. Gettrust, The Ashton Valve Company, 318 Washington St., Chicago. Meeting with Air Brake Association.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.**—F. A. Pontious, Supervisor of Demurrage and Storage, C. & N. W. Ry., Chicago.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.**—L. A. Stone, C. & E. I. Ry., Chicago.
- AMERICAN ASSOCIATION OF ENGINEERS.**—C. E. Drayer, 63 E. Adams St., Chicago.
- AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.**—E. L. Duncan, 332 So. Michigan Ave., Chicago.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.**—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.**—J. Rothschild, Room 400 Union Station, St. Louis, Mo.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.**—J. W. Welsh, 8 W. 40th St., New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.**—C. Borchardt, 202 North Hamlin Ave., Chicago, Ill.
- AMERICAN RAILWAY ASSOCIATION.**—J. E. Fairbanks, General Secretary, 75 Church St., New York, N. Y. Annual convention postponed.
- Division I.—Operating. J. C. Caviston, 30 Vesey St., New York, N. Y.
- Freight Station Section (including former activities of American Association of Freight Agents). R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.
- Medical and Surgical Section. J. C. Caviston, 30 Vesey St., New York, N. Y.
- Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association). J. C. Caviston, 30 Vesey St., New York, N. Y.
- Safety Section. J. C. Caviston, 30 Vesey St., New York.
- Telegraph and Telephone Section (including former activities of the Association of Railway Telegraph Superintendents). W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting has been indefinitely postponed.
- Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers). G. W. Covert, 431 South Dearborn St., Chicago, Ill.
- Division III.—Traffic. J. Gottschalk, 143 Liberty St., New York.
- Division IV.—Engineering. E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Exhibit by National Railway Appliances Association.
- Construction and Maintenance Section. E. H. Fritch.
- Electrical Section. E. H. Fritch.
- Signal Section (including former activities of the Railway Signal Association). H. S. Balliet, 30 Vesey St., New York, N. Y. Next meeting, November 21 and 22, Hotel McAlpin, New York.
- Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association). V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Exhibit by Railway Supply Manufacturers' Association.
- Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association). V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.
- Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association). W. J. Farrell, 30 Vesey St., New York, N. Y.
- Division VII.—Freight Claims (including former activities of the Freight Claim Association). Lewis Pilcher, 431 South Dearborn St., Chicago, Ill.
- Car Service Division.—C. A. Buch, 718 18th St., N. W., Washington, D. C.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.**—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association.
- AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.**—A. Leckie, Industrial Agent, Kansas City Southern Ry., Kansas City, Mo.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.**—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Exhibit by National Railway Appliance Association.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.**—(See American Railway Association, Division V.)
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—R. D. Fletcher, 1145 East Marquette Road, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.
- AMERICAN SHORT LINE RAILWAY ASSOCIATION.**—T. F. Whittelsey, Union Trust Bldg., Washington, D. C.
- AMERICAN SOCIETY FOR STEEL TREATING.**—W. H. Eiseman, 1600 Prospect Ave., Cleveland, Ohio.
- AMERICAN SOCIETY FOR TESTING MATERIALS.**—C. L. Warwick, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.**—Prof. J. H. Dunlap, University of Iowa, Iowa City, Ia. Regular meeting 1st and 3d Wednesdays in month, except July and August, 33 W. 39th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**—Calvin W. Rice, 29 W. 39th St., New York.
- Railroad Division.—A. F. Stuebing, Manager Editor, Railway Mechanical Engineer, Woolworth Bldg., New York.
- AMERICAN TRAIN DISPATCHER'S ASSOCIATION.**—C. L. Darling, 1310-1311 Mallets Bldg., Chicago, Ill. Next convention, June 18, 1923, Chicago.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.**—S. D. Cooper, A. T. & S. Fe R. R., Topeka, Kan. Next meeting, January 23, 1923, New Orleans, La.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.**—H. D. Morris, Northern Pacific R. R., St. Paul, Minn.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.**—Jos. A. Andreucetti, C. & N. W. Ry., Room 411, C. & N. W. Sta., Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.
- ASSOCIATION OF RAILWAY EXECUTIVES.**—Thomas De Witt Cuyler (chairman), 61 Broadway, New York, N. Y.
- ASSOCIATION OF RAILWAY SUPPLY MEN.**—A. W. Clkey, 1658 McCormick Bldg., Chicago. Meeting with International Railway General Foremen's Association.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.**—(See American Railway Association, Division I.)
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.**—(See American Railway Association, Division II.)
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.**—John Nelson, Joseph E. Nelson & Sons, 3240 South Michigan Ave., Chicago. Meeting with convention of American Railway Bridge and Building Ass'n.
- CANADIAN RAILWAY CLUB.**—W. A. Booth, 53 Rushbrook St., Montreal, Que.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.**—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Great Northern Hotel, Chicago.
- CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.**—Thomas B. Koeneke, 604 Federal Reserve Bank Bldg., St. Louis, Mo. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.
- CENTRAL RAILWAY CLUB.**—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2d Tuesday in January, March, May, September and November, Hotel Iroquois, Buffalo, N. Y.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.**—W. P. Elliott, Terminal Railroad Association of St. Louis, East St. Louis, Ill. Annual convention, November 6-8, Hotel Sherman, Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.**—D. B. Wright, 34th St. and Artesian Ave., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.
- CINCINNATI RAILROAD CLUB.**—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2d Tuesday in February, May, September and November.
- EASTERN RAILROAD ASSOCIATION.**—E. N. Bessling, 614 F St., N. W., Washington, D. C.
- FREIGHT CLAIM ASSOCIATION.**—(See American Railway Association, Division VII.)
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.**—C. H. Treichel, Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Friday in month, Room 1414, Manhattan Bldg., Chicago.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.**—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.**—George P. White, 747 Railway Exchange, Chicago. Meeting with International Railroad Master Blacksmiths' Association.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.**—J. G. Crawford, 702 E. 51st St., Chicago. Exhibit by International Railway Supply Men's Association.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.**—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn.
- INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.**—C. W. Sullivan, Garlock Packing Co., 326 W. Madison St., Chicago. Meeting with International Railway Fuel Association.
- MASTER BOILER MAKERS' ASSOCIATION.**—Harry D. Vought, 26 Cortlandt St., New York.
- MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.**—(See A. R. A., Division V.)
- MASTER CAR BUILDERS ASSOCIATION.**—(See A. R. A., Division V.)
- NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.**—Walter C. Nixon, Western Tie & Timber Co., 905 Syndicate Trust Bldg., St. Louis, Mo.
- NATIONAL ASSOCIATION OF RAILWAY AND UTILITIES COMMISSIONERS.**—James B. Walker, 49 Lafayette St., New York. Annual convention, November 14th, Hotel Tuller, Detroit, Mich.
- NATIONAL FOREIGN TRADE COUNCIL.**—O. K. Davis, 1 Hanover Square, New York.
- NATIONAL RAILWAY APPLIANCE ASSOCIATION.**—C. W. Kelly, People's Gas Bldg., Chicago. Annual exhibition at convention of American Railway Engineering Association.
- NEW ENGLAND RAILROAD CLUB.**—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Next meeting, November 14.
- NEW YORK RAILROAD CLUB.**—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3d Friday in month, except June, July and August, at 29 W. 39th St., New York.
- PACIFIC RAILWAY CLUB.**—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2d Thursday in month, alternately in San Francisco and Oakland.
- RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.**—E. R. Woodson, 1116 Woodward Building, Washington, D. C.
- RAILWAY BUSINESS ASSOCIATION.**—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa. Annual meeting and dinner, November 9, Hotel Commodore, New York.
- RAILWAY CLUB OF PITTSBURGH.**—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.
- RAILWAY DEVELOPMENT ASSOCIATION.**—(See Am. Ry. Development Assn.)
- RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.**—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.
- RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.**—R. J. Himmelright, 17 East 42nd St., New York. Meeting with Traveling Engineers' Association.
- RAILWAY FIRE PROTECTION ASSOCIATION.**—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.
- RAILWAY REAL ESTATE ASSOCIATION.**—R. H. Morrison, C. & O. Ry., Richmond, Va.
- RAILWAY SIGNAL ASSOCIATION.**—(See A. R. A. Division IV, Signal Section.)
- RAILWAY STOREKEEPERS' ASSOCIATION.**—(See A. R. A., Division VI.)
- RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.**—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meeting with A. R. A., Division V.
- RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.**—G. A. Nelson, 30 Church St., New York.
- RAILWAY TREASURY OFFICERS' ASSOCIATION.**—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.
- ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.**—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Annual convention, November 21-23, 1922, Hotel Statler, Cleveland, Ohio. Exhibit by Track Supply Association.
- ST. LOUIS RAILWAY CLUB.**—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August.
- SIGNAL APPLIANCE ASSOCIATION.**—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.
- SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.**—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3d Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.
- SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.**—J. L. Carrier, Car Serv. Agt., Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.
- SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—H. S. White, 9 N. Jefferson St., Chicago.
- TRACK SUPPLY ASSOCIATION.**—W. C. Kidd, Ramapo Iron Works, Hilburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.
- TRAVELING ENGINEERS' ASSOCIATION.**—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Exhibit by Railway Equipment Manufacturers' Association.
- WESTERN RAILWAY CLUB.**—Bruce V. Crandall, 14 E. Jackson Boulevard, Chicago. Regular meetings, 3d Monday each month except June, July and August.

Traffic News

The New York Central Lines on Monday, October 23, reported shippers as loading a total of 3,978 cars of coal, 308 more than ever were loaded before on these lines in a single day.

The Southern Railway announces the opening of freight offices at San Francisco and Los Angeles, California. H. S. Knapp is the representative at San Francisco, and H. V. Gardner at Los Angeles.

A bulletin issued by the Superintendent of the Rocky Mountain National Park, Colorado, says that during the 1922 season (July 1 to September 10) there were 108,472 visitors to the park, while during July alone, 51,114 people entered, making an average for that month of 1,648 persons a day.

Grain, to the amount of 150 cars a day, is now going east from Port Arthur, Ont., by rail, this movement having been started because of a blockade at Buffalo making it impossible to send grain forward by vessel. Because of lack of cars at Buffalo, the elevators at that city are full, and at the end of last week it was said that 5,000,000 bushels of grain were afloat waiting to be unloaded.

Eastern Box Cars Ordered Returned

The Car Service Division of the American Railway Association, in orders issued on October 26 instructed railroad companies in the Northwestern, Centralwestern and Southwestern districts to return at once box cars on their lines which belong to Eastern roads. These cars are to be loaded and sent east as rapidly as possible.

The order follows a similar one issued the day before by which railroads east of Chicago, Peoria and St. Louis were instructed to send west immediately all box cars belonging to western roads in order to enable the roads in the western agricultural states to meet the box car shortage that exists in that part of the country, the box cars of western roads being built especially to transport grain.

Under this latest order the western carriers are told to discontinue using locally, in station-to-station service, box cars belonging to eastern roads.

Through this series of orders the railroads in both the eastern and western districts will more nearly be able to supply the class of cars required to meet the demands of shippers in their particular sections.

Increase in Express Rates Asked

The Interstate Commerce Commission on October 26 made public a petition filed with it by the American Railway Express Company on behalf of itself and the railroads over whose lines it operates for authority to make increases in its rates and certain changes in classification and ratings. At the same time the commission issued an amendment to its order calling for a general investigation of interstate express rates, which had been set for hearing at Washington on November 20 to include within the investigation the reasonableness and propriety of the proposed revised rates. In the petition the company mentioned no specific amount of increase, but presented evidence to show that the present rates are inadequate. The company conducted its business without profit from July 1, 1918, to September 1, 1920, the government bearing the loss of approximately \$70,000,000. In 1921 there was a deficit in the conduct of the express business by the railroads and the company of \$39,171,191 and the deficit for 1922 is estimated at \$13,000,000, not allowing anything for a return on the investment of the express company or those of the railroad companies.

Both the express and railroad companies, the petition said, have conducted their business on the most economical basis consistent with good service. While the costs of operation have been declining, due to a gradual return to normal of all operating expenses and general conditions, the petitioner believes that the ratio of operation expense will continue practically the same in

the future so that there will be at least the same deficit in 1922 and 1923 and future years unless an increase in express rates is granted. It is also stated that the net operating income of the Class I railroads for the first six months of 1922 was only 4.4 per cent on their total valuation, plus additions and betterments to September 30, 1921. The company says that an increase in rates is necessary to pay operating expenses, taxes and a fair return on the property devoted to that service and it is also desirable that certain changes be made in classification and ratings which will be proposed in detail at the hearing.

Coal Production

Preliminary returns on coal production in the fourth week of October indicate a total of 12,500,000 net tons, of which about 10,400,000 tons is bituminous coal and 2,100,000 is anthracite, according to the weekly bulletin of the Geological Survey. Revised estimates for the third week show 10,365,000 tons of bituminous and 2,003,000 tons of anthracite. The gain in the rate of production during the past two weeks reflects some improvement in the transportation situation which, however, remains the principal factor limiting output. The rate of output is approaching adequacy but does not yet assure sufficient coal to meet current needs.

The outstanding feature of the mine reports for the week of October 14 was the gradual improvement in car supply. Districts in which working time increased because of better railroad service were Illinois, Northern Ohio, Westmoreland, Central Pennsylvania, Pocahontas, Tug River, Kenova-Thacker, Northeastern Kentucky, and the Southwest interstate region. In the Pittsburgh district in Northern West Virginia, Alabama, and the Rocky Mountain States, however, losses of working time ascribed to transportation disability increased.

Even in the Pocahontas field where some improvement was noted operators alleged the loss of 55.8 per cent because of railroad disability. In the Winding Gulf, Logan, Hazard and Harlan fields the loss exceeded 70 per cent.

Labor as a factor limiting mine working time is now important only in the Cumberland-Piedmont, Kanawha, and Connellsville regions. In addition, however, many mines are working short-handed in the Somerset, Westmoreland and Connellsville district of Pennsylvania.

Reports of declining prices at the mines have yet to be reflected in mine idleness through no market, except in the Trans-Mississippi States. East of that river only two mines reported loss of time through lack of orders. West of the river, however, indications of no market were received from Iowa, Missouri, Kansas, Oklahoma, Texas, Colorado and Washington.

Although the tonnage of soft coal dumped into vessels at Lake Erie ports has declined steadily during the past month, and in the week of Oct. 16-22 was at the rate of about 1,000,000 tons, the tonnage remains much larger than at the same date a year ago. Anthracite shipments from Buffalo during the week ended October 17 were 113,300 net tons and in the week ended October were 119,100 tons.

According to the Ore and Coal Exchange the total soft coal handled at Lake Erie piers during the week ended October 24 was 1,004,094 net tons as compared with 1,090,599 tons in the week preceding. In comparison with the corresponding week a year ago this was an increase of 69 per cent.

During the present season to October 22, inclusive, 12,855,130 tons of cargo coal (bituminous) have been dumped into vessels at Lake Erie piers.

According to reports received by the Car Service Division of the American Railway Association, the total loading of bituminous coal in the week ending October 28 was 190,276 cars. This exceeded the week before by 3,981 cars which up to that time had marked the peak. Loading of anthracite coal totaled 32,927 cars which was a decrease of 4,189 cars compared with the week before. During the first five days last week loading averaged 6,508 cars daily, but on Saturday, because of the holiday (Mitchell Day) only 385 cars were loaded.

More cars were loaded with bituminous coal on Monday than on any day in approximately three years, with the exception of one in 1920, according to reports received by the Car Service Division of the American Railway Association. The total was 45,298 cars. This was only exceeded in the three-year period on November 22, 1920, when the total was 45,457 cars or only 159 cars greater. The records of the Car Service Division do not go back prior to 1920.

Commission and Court News

Interstate Commerce Commission

The commission has issued a decision finding proposed increases in rates on iron and steel articles rated as special iron in Southern classification from Ohio river points, St. Louis and points taking the same rates to points in Carolina territory, Augusta, Ga., and South Atlantic ports and points taking the same rates, to have been justified in part. The suspended schedules were ordered cancelled without prejudice to the establishment of rates in conformity with the commission's findings.

State Commissions

The Railroad Commission of Tennessee has ordered 12 railroads to appear on November 9 and show cause why they should not furnish cars for the transportation of gravel and other material for use in highway construction. The commission believes that the railroads have been furnishing open top cars for use in carrying classes of freight not authorized by orders which require such cars to be used for coal, food and other commodities classed as essentials.

Service on M., D. & G. Ordered Restored

The Arkansas Railroad Commission has ordered that operations on that portion of the defunct Memphis, Dallas & Gulf, between Hot Springs, Ark., and Glenwood, must be resumed within 90 days. At present the new owners are operating the M., D. & G. only between Ashdown, Ark., and Shawmut, under the name of the Graysonia, Nashville & Shawmut. The Commission, however, has held that the entire line between Hot Springs and Ashdown is owned by one interest and must be operated throughout.

Court News

Necessity for Evidence of Value of Damaged Shipment

In a suit for damages to a shipment of celery and cucumbers while delayed in transit, there was evidence that the goods were of some value after being damaged, but no evidence as to this value at the time they were offered by the carrier to the consignee. The Georgia Court of Appeals holds that a verdict for the plaintiff was without evidence to sustain it. Evidence of the selling price on the day following was insufficient, the goods being subject to rapid deterioration.—*American Ry. Express Co. v. Dubois Bros.* (Ga. App.) 111 S. E. 70.

Violation of Commission's Order as to

Use of Ladders on Cars

The federal district court for the Western District of Michigan holds that the Interstate Commerce Commission's order that all cars having sides more than 36 inches high must be equipped with side ladders is final and not subject to review or change by the courts. Where interstate ore cars, no longer required for carrying ore, were reconstructed to carry limestone by adding a superstructure over 36 inches high, which would be so used as long as the limestone traffic continued, the superstructure was held not temporary, and its use without ladders was a violation of the order subjecting the railroad to the penalty therefor.—*United States v. Duluth S. S. & Atlantic*, 281 Fed. 347.

What Is a Secure Sill Step?

The Circuit Court of Appeals, Fourth Circuit, holds that the requirement of the Safety Appliance Act of "secure sill steps" means "steps which furnish secure footing for employees having to use them," and it was a question for the jury whether slickness of an engine sill step rendered it not a secure one within the act. Knapp, Circuit Judge, dissented, on the ground that thus to hold

was to bind the railroad to keep the step continually new, which would be practically impossible, "and in effect to hold that in the matter of safety appliances the railroad company is an insurer, which is not the law." It should be said that the court regarded the case as a close one on the question as to whether it should go to the jury.—*Davis v. Reynolds*, 280 Fed. 363.

United States Supreme Court

No Reparation to Shippers for Loading Services

The Supreme Court of the United States has reversed the judgment of the Court of Appeals of the District of Columbia (277 Fed. 538) directing the issue of mandamus requiring the Interstate Commerce Commission to take jurisdiction of the claims of the Waste Merchants' Association of New York for allowances, under section 15 of the Act to Regulate Commerce, for loading services in respect of paper stock shipped in carload lots from New York harbor, which services had been imposed upon the shippers, members of the association, by the carriers' failure to perform that duty, and to allow damages and fix the amount thereof. The Supreme Court finds that the commission did not dismiss the complaint for lack of jurisdiction, but heard the case fully, and dismissed the demand for allowances because it held the shippers were not entitled to relief. It found that "the rates charged were not unreasonable or discriminatory (in violation of the Commerce Act) nor unreasonable for the service actually performed (in violation of the Federal Control Act). It found that the conditions complained of were an incident of the World War; that the arrangement for loading was a voluntary one beneficial to shipper; that there was no provision in the tariffs for allowance to shippers who load cars; and that, therefore, such allowance could not legally be made by the carriers."

Petitioners sought in the proceeding to set aside the adverse decision of the Commission on the merits and to compel a decision in their favor. The Court of Appeals granted the writ. This was error. Mandamus cannot be had to compel a particular exercise of judgment or discretion, *Riverside Oil Co. v. Hitchcock*, 190 U. S. 316; *Ness v. Fisher*, 223 U. S. 683; *Hall v. Payne*, 254 U. S. 343; or be used as a writ of error, *Commissioner of Patents v. Whitely*, 4 Wall, 522.

Whether a judicial review of the Commission's decision could be had by some other form of proceeding the Supreme Court considered it unnecessary to enquire.

The original complaint of the association, filed March 11, 1919, was directed against the Director General of Railroads and 184 transportation companies. Reparation was sought to the extent of "a reasonable allowance per ton or per car for lighterage services performed, and which are presumed to be performed by defendants," and "liquidated damages for violation of said act to regulate commerce and said federal control act." The allegation as to disregard of the tariff provisions in respect to lighterage was abandoned. The proceedings before the Interstate Commerce Commission showed that either the carriers or the shippers suggested that the movement of paper stock would be facilitated if the shippers were willing to load their paper stock into empty cars for outbound movement. The evidence was somewhat conflicting as to the origin of this suggestion. However, from the evidence as whole, there was little doubt that an agreement, tacit or expressed, was arrived at between the carriers and shippers of paper stock by which the latter undertook to do their own loading of the cars, if they were permitted to drive their trucks on to the carriers' piers, having but short periods of waiting. The complainant's members were thus enabled to withdraw their trucks from the long lines of vehicles containing miscellaneous commodities and to form lines consisting exclusively of paper stock, obviating great delays and the consequent additional trucking expense. The Commission held (57 I. C. C. 686) that such a mutual arrangement was unquestionably for the benefit of both parties under war-time conditions. Nothing in the act requires that a shipper must be reimbursed for transportation service that he may elect to perform primarily for his own convenience. Section 15, the Commission held, was intended merely to provide against excessive allowances to owners of shipments for services connected with transportation. The other findings of the Commission are stated in the above quotation from the Supreme Court's opinion. *Interstate Commerce Commission v. United States ex rel. Waste Merchants' Association of New York*. Decided October 23, 1922. Opinion by Mr. Justice Brandeis.

Foreign Railway News

Performance of British Railways in 1921

The Ministry of Transport of Great Britain has issued a volume of statistics covering the operation of British railways in 1921. The average return to capital for the year's operations was 4.28 per cent. This return was possible only with government compensation, the roads having operated at a deficit amounting to £5,892,000.

1,000 Employees of English Road Are Attending Classes in Transportation

The North Eastern Railway, England, has in operation a very comprehensive program for the training of clerical employees.

Most entrants into the service come in between the ages of 15 and 17. They are required to pass an examination in regard to physical fitness and a written examination in English composition, arithmetic, geography and other elementary subjects. A high standard is maintained and only about 25 per cent of the applicants succeed in gaining employment. The successful ones are then placed on probation for a period of not less than a year. Every clerk is expected to become proficient in shorthand within a reasonable time after entering the service and, after a year's probation, he is called upon to pass an examination in that subject. At the age of 17½, a junior clerk is eligible for a qualifying test in shorthand and typewriting, telegraphy, or some kindred subject and if he passes this examination, he is advanced to the position of fifth class clerk at the age of 18. These tests are compulsory.

In addition to these there are voluntary examinations on the following subjects:

- A. Train Signaling; Train Operation by Telegraph Block; General Rules and Regulations.
- B. 1. Freight Station Work and Accounts, or
2. Passenger Station Work and Accounts, or
3. Locomotive and Car Accounts and Statistics, or
4. Engineering Accounts and Office Work.
- C. Railway Operation.
- D. Railway Economics.
- E. Railway Law.
- F. Railway and Commercial Geography of the United Kingdom.
- H. An examination on any other cognate subject.

Preparation for these examinations in subjects A to F, as given above, is offered in classes held during the winter months at various terminals along the railway. Three classes of certificates are issued for passing marks in any of the subjects and a final certificate is granted to any employee who qualifies in five of the subjects, which must include subjects A and B and at least two from C to F inclusive. For success in passing any subject from C to F, money prizes are given as follows:

	£	s.
Class 1 Certificate	5	5
Class 2 Certificate	2	2
Class 3 Certificate	1	1

In addition, a prize of £5 5s. is given to each student who obtains a final certificate within a period of five years.

Instruction in some of the branches in which employees are examined is given in conjunction with the Universities of Durham and Leeds and lectures are given by competent and learned instructors. Each course consists of 20 lectures. The classes are popular and nearly 1,000 students have enrolled for work during the winter months.

Above this program of instruction is the "traffic apprenticeship." The company has about 30 traffic apprentices who are appointed as the result of competitive examinations in the following subjects:

- 1. Accounts; Block Operation; General Rules and Regulations.
- 2. Railway Operation.
- 3. Railway Economics.
- 4. A General Paper
- 5. An Essay.

These examinations are conducted by the University of Leeds and Armstrong College, Newcastle. The company appoints the

five candidates who make the highest marks as traffic apprentices and it may also select any other student who has done particularly well. The traffic apprentice goes through a strenuous course of training lasting three years. He serves in many departments and his progress is constantly watched by the officers of the company. A limited number of traffic apprentices have been appointed from outside the service, notably from graduates of colleges and universities.

The *Railway Age* is indebted to the *Railway Gazette* (London) for the above information.

Control of Chinese Eastern Relinquished

Secretary Hughes of the State Department has addressed a note to the Chinese government announcing that, following the withdrawal of allied troops from Siberia, the United States Government has followed the action of Great Britain, France, Italy and Japan in relinquishing its participation in the inter-allied control of the Chinese Eastern Railway. The control was established by an agreement in connection with the dispatch of American and allied troops to Siberia in 1918. The representatives of the United States on the inter-allied committee at Vladivostok and the technical board at Harbin have been instructed to proceed to the winding up of the affairs of each organization and the termination of further activity as of October 30.

"The government of the United States takes this occasion," Secretary Hughes said, "also to reaffirm its concern in the preservation of the Chinese Eastern Railway with a view to its ultimate return to those in interest without the impairing of any existing rights, as well as its continued interest in the efficient operation of the railway and its maintenance as a free avenue of commerce open to the citizens of all countries without favor or discrimination.

"Having regard to its concern in these matters, and to the important contributions which it has made to the maintenance and operation of the railway during the last four years, both materially and through the services of the distinguished American engineer, Mr. John F. Stevens, and his assistants, the government of the United States will not fail to continue to observe carefully the administration and operation of the railway and the manner in which the government of China discharges the obligations it has assumed.

"At the same time the government of the United States desires to assure the Chinese government of its friendly interest and goodwill and its readiness to assist or co-operate with the government of China and the other powers concerned at any time in any practicable way with a view to conserving the railway and assuring its efficient operation in the interest of all concerned."



Photo Courtesy, Campbell, Gray, Ltd., London

Planning for Heavy Passenger Traffic at British Empire Exhibition at Wembley, Near London, in 1924

Railway Officers Inspect Site of Exhibition to Make Preliminary Plans—From Left to Right, Back Row: Col. Stone, in Charge of Exhibition, and Mr. Derry of the London & South Western—Middle Row: Messrs. Hamlin (Great Northern), Oddy (G. N.), Smith (Great Central), Crabtree (Great Western)—Front Row: Messrs. Daniels (G. N.), Dennis (London, Brighton & South Coast), and Milton (L. & S. W.)

Equipment and Supplies

Locomotives

THE PHILADELPHIA & READING is arranging to build 5 Pacific type locomotives in its Reading shops.

THE GREAT NORTHERN denies a current rumor that it expects to come into the market soon for a number of locomotives.

THE TENNESSEE CENTRAL, reported in the *Railway Age* of October 28 as contemplating the purchase of 4 Mountain type locomotives, has deferred buying for the present.

THE SEABOARD AIR LINE has ordered one locomotive from the American Locomotive Company. It has also ordered one locomotive from the Baldwin Locomotive Works and one from the Lima Locomotive Works.

THE SOUTHERN PACIFIC, TEXAS LINES, reported in the *Railway Age* of October 14 as inquiring for 9 Pacific type locomotives, has ordered this equipment from the Baldwin Locomotive Works.

THE CHESAPEAKE & OHIO, reported in the *Railway Age* of September 30 as inquiring for 2 Mountain type and 6 Pacific type locomotives, has ordered this equipment from the American Locomotive Company.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of October 14 as inquiring for 10 Mikado type locomotives, has ordered this equipment from the American Locomotive Company. This company is now asking for 4 Pacific type locomotives.

THE ILLINOIS CENTRAL reported in the *Railway Age* of October 28 as inquiring for about 75 locomotives, has ordered 85 Mikado type locomotives from the Lima Locomotive Works. It is expected that this road will place an order soon for 40 additional locomotives.

THE TOLEDO TERMINAL, reported in the *Railway Age* of October 21 as contemplating the purchase of three switching locomotives, has placed an order with the American Locomotive Company for one six-wheel switching locomotive and two Consolidation type locomotives.

Freight Cars

THE MISSISSIPPI CENTRAL is inquiring for from 100 to 200 flat cars.

THE CORNWALL RAILROAD is inquiring for 40 ore cars of 50 tons' capacity.

THE GENERAL ELECTRIC COMPANY is inquiring for 2 tank cars of 10,000 gal. capacity.

THE CHARLESTON & WESTERN CAROLINA has ordered 100 single sheathed box cars of 40 tons' capacity from the Standard Tank Car Company.

THE BEACON OIL COMPANY, Boston, Mass., has ordered 50 tank cars of 8,000 gal. capacity from the American Car & Foundry Company.

THE PENNSYLVANIA SALT MANUFACTURING COMPANY, Philadelphia, Pa., has placed an order with the General American Car Company for 3 flat cars of 30 tons' capacity.

THE MINNEAPOLIS, ST. PAUL & SALT STE. MARIE has ordered 500 box cars and 250 gondola cars from the Pullman Company and 500 box cars from the American Car & Foundry Co.

THE ST. LOUIS SOUTH WESTERN is inquiring for 500 double sheathed box cars of 40 tons' capacity, 500 automobile cars of 40 tons' capacity. The company is also inquiring for 200 ballast cars of 50 tons' capacity.

THE CHICAGO & NORTH WESTERN, reported in the *Railway Age* of October 14 as inquiring for 800 steel ore cars of 50 tons' capacity, has ordered this equipment from the Pullman Company.

THE WESTERN PACIFIC, reported in the *Railway Age* of October 28 as inquiring for 800 general service gondola cars and 500 stock cars, is inquiring for 500 to 1,000 of the latter. Some reports state that this equipment is to be used by the Denver & Rio Grande Western.

Iron and Steel

THE NORTHERN PACIFIC is reported to have divided an order for 35,000 tons of rail.

THE CHICAGO & NORTH WESTERN has ordered 40,000 tons of rail from the Illinois Steel Company.

THE MISSOURI PACIFIC has ordered 118 tons of structural steel from the Virginia Bridge & Iron Company.

THE ILLINOIS CENTRAL is reported to have divided an order for 30,000 tons of rail of which the Inland Steel Company received 10,000 tons.

THE VIRGINIAN RAILWAY has ordered from the Bethlehem Steel Bridge Corporation 5,700 tons of steel for a coal pier at Sewalls Point, Norfolk, Va.

THE GREAT NORTHERN has closed bids for one steel oil tank of 65,000 gal. capacity, including all steel work fabricated for erection.

THE GRAND TRUNK has placed an order with the British Empire Steel Corporation for 25,000 tons of 100-lb. rails. The rails will be rolled at the Sydney, N. S., plant of the Dominion Steel Corporation.

THE SOUTHERN PACIFIC has ordered 43,400 tons of rail from the Tennessee Coal Iron & Railroad Company and 1,600 tons from the Lorain Steel Company. This is in addition to 76,000 tons previously placed by this company for delivery in 1923, as already reported in the *Railway Age*.

Track Specialties

THE MICHIGAN CENTRAL is inquiring for about 11,000 kegs of spikes.

THE NEW YORK CENTRAL is reported to have divided about 25,000 kegs of bolts and 15,000 kegs of spikes between the Oliver Iron & Steel Company, the United States Steel Corporation, the Inland Steel Company and the Buffalo Bolt Company.

Machinery and Tools

THE NEW YORK CENTRAL is inquiring for one crank planer.

THE CHICAGO, ROCK ISLAND & PACIFIC has placed an order with the Whiting Corporation for a 200-ton transfer table.

THE ST. LOUIS SOUTHWESTERN is inquiring for two boring mills, a centering machine, a cutter, a reamer grinder and two emery stands.

THE CANADIAN NATIONAL is inquiring for one 32-in. by 32-in. crank planing machine, one 18-in. by 8-ft. lathe and one close quarter pneumatic drill.

THE CHICAGO & NORTH WESTERN is inquiring for six lathes, three grinding emery wheel stands, three power hack saws, two drill presses, two crank planers, one spot welding machine, one centering machine and one power hammer.

Signaling

THE ANN ARBOR has placed an order with the General Railway Signal Company for a 72-lever electric interlocking machine to be installed at Boulevard (Toledo), Ohio. The order also includes an illuminated track diagram, relays, position-light signals and replacement of storage batteries and charging outfit.

Supply Trade News

John G. Turpie has been appointed assistant to the president and **B. W. Lockwood** to consulting engineer of the **Standard Tank Car Company**, Sharon, Pa.

H. P. Hevenor has joined the staff of **Dwight P. Robinson & Company, Incorporated**, New York, as consulting engineer. He was until recently a member of the firm of **Engel & Hevenor, Incorporated**, where he specialized in track construction.

Dwight P. Robinson & Company, Incorporated, New York, is now at work on the design and construction of an extension to the plant of the **American Rolling Mill Company** at Ashland, Ky. The extension will include a jobbing and sheet mill and a galvanizing plant.

J. T. Mullaney, signal supervisor of the Chicago, Milwaukee & St. Paul, with headquarters at Deer Lodge, Mont., has left to enter the service of the **Union Signal Construction Company**, and will take charge of the installation of an interlocking plant for the new Chicago Union station.

G. P. Atkinson, for several years connected with the sales department of the **Weston Electrical Instrument Company**, Newark, N. J., has established an office at Atlanta, Ga., to represent that company in Georgia, South Carolina and northern Alabama. In addition to Weston instruments, Mr. Atkinson will represent several other electrical equipment companies.

Joseph T. Ryerson & Son

Celebrates Eightieth Anniversary

One of the oldest companies in the railway supply business in this country is **Joseph T. Ryerson & Son**, which this month celebrates its eightieth anniversary. The history of the company and the earlier connection of the Ryerson family with the iron industry in this country are fascinating chapters in the development of industry and transportation in America.

Shortly after New Jersey was granted to Lord Berkeley,



Old Warehouse on South Water Street, Chicago, Occupied by **Joseph T. Ryerson** from 1852 to 1872

George Ryerson and a syndicate purchased 6,000 acres of land in the northern part of the state. In 1695 the development of this tract for agricultural purposes was begun. Later ore fields were discovered and developed so that Mr. Ryerson and his associates were among the first to work the iron mines in this region. His son, **Marten Ryerson**, further developed iron pro-

duction and quite an amount of pig iron was made as early as 1740. The Ringwood and Wynokie mines in this region supplied the colonial army with great quantities of munitions material and equipment during the Revolutionary War.

About 1790 **Marten's** son, **Thomas Ryerson**, moved to Philadelphia and started business as a wholesale dealer in finished iron and steel products. **Joseph**, the son of **Thomas Ryerson**, continued in the same business. Hearing the call of the west, he started for Chicago in 1842, as the agent of **Wood, Edwards & McKnight** of Pittsburgh.

Some idea of the development of the country at this time can be gained from the transportation facilities. On his trip he went by railroad from Philadelphia to Columbia, Pa., then by stage coach to Pittsburgh and Cleveland; by boat to Detroit; by railroad to Jackson, Mich.; by stage to St. Joseph, Mich., and by boat to Chicago. The journey took eight days and he arrived November 1, 1842.

The rent for Mr. Ryerson's first store near Clark and Water streets, was \$200 a year. From this small beginning has developed the present company. As business expanded, Mr. Ryerson moved first to Lake street and then to South Water street where the warehouse was located for many years.

Joseph T. Ryerson died in 1883 and his son, **Edward L. Ryerson**, succeeded him at the head of the business. The company was incorporated as **Joseph T. Ryerson & Son** in 1888. In 1908 the first buildings of the present Chicago plant were erected. They have been gradually expanded since until they now occupy over 19 acres. Other plants were established in St. Louis in 1914; in New York in 1915; in Detroit in 1917, and in Buffalo in 1919. The five plants now cover 40 acres, having a combined floor space of nearly 1,500,000 sq. ft.

Obituary

E. A. Hurlbut, formerly western railway sales representative of the **Crouse-Hinds Company**, with headquarters at Chicago, died in Evanston, Ill., on October 9.

William Blake Wood, president of **Gifford-Wood Co.**, Hudson, N. Y., died on October 28 at the Albany City Hospital, after a two weeks' illness. Mr. Wood was born in Arlington, Mass., on July 15, 1869. He became a member of the firm of **William T. Wood & Co.**, of Arlington, upon the death of his father, **Cyrus**, in 1896 and continued as a partner with **William E. Wood**, and later as a member of **Gifford-Wood Co.** when it was incorporated in 1905. He moved with his family to Hudson in 1911 and succeeded **Malcolm Gifford** as president upon the latter's death in 1919.

Trade Publications

FIREPROOF CONSTRUCTION FOR SMALL COALING STATIONS.—The **Roberts & Schaefer Company**, Chicago, has issued a folder illustrating and describing one of the most recent developments in coaling station construction, namely, the application of reinforced concrete, permanent construction to coaling stations of 100 tons storage capacity, serving either one or two tracks. The descriptive matter shows how a permanent and reliable plant can be obtained for a moderate outlay.

STEEL STRUCTURES.—The **McClintic-Marshall Company**, Pittsburgh, Pa., has recently issued a leather bound, 70-page book containing illustrations of structures erected by this company. A short introduction states that the pictures is the simplest and most direct method of transferring ideas and that this book is a form of picture writing. Other than this and the titles under the illustrations, there is no printed text. Sixty-four pages are devoted to full-page illustrations of a large number of steel structures covering power houses, enginehouses, erecting shops, warehouses, freight houses, office buildings, pier sheds, and other types.

THE WABASH RAILROAD, by a notice issued by **J. E. Taussig**, president, has offered a reward of \$1,000 for information leading to the arrest and conviction of the person or persons guilty of derailing train No. 2 on October 19, near Williamsport, Ind. The derailment resulted in the deaths of three members of the crew and some injuries to passengers.

Railway Construction

BANGOR & AROOSTOOK.—This company has awarded a contract to the Howlett Construction Company, Moline, Ill., for a coaling station with 50 tons' ground storage and a 25 tons' overhead storage, using automatic machinery, at Squa Pan, Me.

LOUISVILLE & NASHVILLE.—This company has awarded a contract to the H. K. Ferguson Company, Cleveland, Ohio, for the construction of a freight house 60 by 600 ft. with a second story at one end for offices, at Knoxville, Tenn., to cost approximately \$150,000.

MISSOURI PACIFIC.—This company has awarded a contract to T. S. Leake & Company, Chicago, for the construction of a frame engine house 90 by 200 ft. with a composition roof at Pueblo, Cal.

PENNSYLVANIA.—This company has just completed and placed in service at Pitcairn, Pa., a modern 34-stall enginehouse with turntable at a cost of \$1,385,000. The turntable is 110 ft. long and electrically operated. Each stall is 140 ft. long and so constructed that it can be completely enclosed. The building is steam heated.

PENNSYLVANIA.—This company is asking for bids for the completion of the substructure for the Cherry street undergrade bridge, Erie, Pa. The approximate quantities are as follows: 600 cu. yds. foundation excavation; 400 cu. yds. concrete foundation masonry; and 770 cu. yds. concrete abutment masonry. The use of slag concrete will be permitted. The work will be in charge of George Nauman, assistant to the chief engineer, Pittsburgh, Pa.

PENNSYLVANIA.—This company has undertaken improvements and extensions to cost \$900,000 at its Enola Yard on its low grade freight line three miles west of Harrisburg, Pa. The purpose of the improvement is to facilitate the movement of through freight and to provide enlarged facilities for the handling of through preference shipments and scheduled freight trains, in all directions and from all points, east, west, north and south. The work includes the erection of a new steel freight car repair shop, 100 ft. by 620 ft., the building of which has already been begun.

PENNSYLVANIA.—This company is asking for bids for all the work necessary to complete the strengthening of the bulkhead of the American Agricultural Chemical Company's warehouse at Baltimore, Canton, Md. The approximate quantities are as follows: 4,300 tons stone (1 and 2 men) furnished and placed; 9,600 sq. ft. four-inch concrete flooring; 300 cu. yd. back fill and excavation; and 25 piles, 40 ft. long, 14 in. butts, in place. The work is in charge of J. W. Craig, assistant engineer, Baltimore, Md.

PENNSYLVANIA.—This company proposes the installation of extensive waterfront facilities at Little Creek, near Norfolk, Va., where it has purchased about 1,000 acres of land together with water rights. At present the road enters Norfolk direct by car ferry from Cape Charles. In the proposed development car ferry service will terminate at Little Creek and entrance to Norfolk will be effected by trackage rights over other roads. The improvement includes the construction of a modern freight warehouse at St. Julian avenue, Norfolk. At Little Creek a complete rail-water terminal will be constructed. This work will involve the expenditure of some \$3,000,000.

TENNESSEE CENTRAL.—This company will replace the machine shop, blacksmith shop, tin shop and woodworking plant at Nashville, Tenn., destroyed by fire on October 27.

VIRGINIAN.—This company will build a new steel coal pier at Sewell's Point, Norfolk, Va., to cost approximately \$3,000,000. The new pier, it is reported, will be 1,073 ft. long, 86 ft. wide and 74½ ft. high. It will be completely equipped with modern coal dumping machinery and, it is reported, will have a dumping capacity of about 6,000 tons an hour and will double the company's coal dumping capacity at Sewalls Point.

Railway Financial News

ATCHISON, TOPEKA & SANTA FE.—*To Redeem Equipment Notes.*—In addition to the \$490,000, series C, 6 per cent equipment trust notes maturing on January 15, 1923, this company will retire the remaining \$5,884,800 of its 6 per cent equipment notes, at 103, on that date. The total issue of these 6 per cent equipment notes was \$7,356,000, and they were issued in 15 series, maturing on the 15th of January from 1921 to 1935.

BOSTON & MAINE.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue \$4,000,000 of 6 per cent bonds to be issued for refunding purposes. Merrill, Oldham & Co. have offered 87.89 for \$3,000,000 of the bonds with an option on \$1,000,000 additional at the same figure.

CAROLINA & YADKIN RIVER.—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line from High Point to High Rock, N. C., 35 miles.

CENTRAL INDIANA.—*Receivership.*—William P. Herod, of Indianapolis, was appointed receiver for this road on October 31 by Federal Judge A. B. Anderson on the petition of the Union Trust Company, of New York.

The Central Indiana operates between Muncie, Ind., and Brazil, 127 miles.

CENTRAL VERMONT.—*Equipment Notes Offered.*—Plympton, Gardiner & Co. and Paine, Webber & Co. are offering \$754,000 6 per cent equipment trust notes, series E, at prices to yield from 5 per cent to 5.75 per cent, according to maturity. The notes are dated May 1, 1922, and mature \$49,000 semi-annually from November 1, 1922, to May 1, 1927, and \$44,000 semi-annually from November 1, 1927, to May 1, 1930. The first semi-annual instalment of \$49,000 was paid on November 1. The notes are issued to provide part payment for 500 30-ton rebuilt box cars and 200 50-ton rebuilt coal cars, purchased at a contract cost of \$1,107,571.

CHICAGO & EASTERN ILLINOIS.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue \$989,000 of 5½ per cent prior lien bonds for the purpose of partially reimbursing the treasury for cash payments for cars and locomotives. It is proposed to sell the bonds to Kuhn, Loeb & Co., at 95.

CHICAGO GREAT WESTERN.—*Asks Authority for Equipment Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue 40 notes aggregating \$906,573 at 5½ per cent, maturing quarterly from June 15, 1923, to March 15, 1933, to the Pullman Company in payment of 75 per cent of the cost of 500 box cars at \$1,850 each.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—*New Directors.*—Albert H. Harris and Warren S. Hayden have been elected directors to succeed A. T. Hardin and William Rockefeller, deceased. Bertram Cutler has also been elected a director.

DENVER & RIO GRANDE.—*Deposit Date Extended.*—The Sutro committee has extended the time for the deposit of bonds with the American Exchange National Bank to December 4, 1922. A statement issued by the committee said in part:

"The constructive efforts of our committee are being and have been thoroughly examined into by numerous important independent and impartial sources, resulting in each case in recommendations that bonds be deposited with the committee."

DETROIT & MACKINAC.—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its Hurst branch, from La Rocque to Hurst, Mich., 5.08 miles.

GRAND TRUNK PACIFIC.—*To Pay Interest.*—J. P. Morgan & Co. announce that the Bank of Montreal has been ordered by the

Dominion of Canada to pay the coupons due in November on the Alberta bonds.

INTERNATIONAL-GREAT NORTHERN.—To Buy Bonds.—J. & W. Seligman & Co. and Speyer & Co., reorganization managers, have arranged to purchase the first mortgage 6 per cent (extended to 7 per cent) bonds of the International & Great Northern, due November 1, not heretofore deposited under the plan. The bonds should be presented on that date to the Equitable Trust Company, where they will be purchased at par. When the new International-Great Northern securities are issued, as it is expected they will be later in the year, the old first mortgage bonds will be cancelled and the mortgage discharged. Interest due November 1 will be paid by the receiver upon the surrender of the coupon.

NORFOLK & WESTERN.—To Redeem Equipment Notes.—Holders of the following equipment gold notes issued under the agreement dated January 15, 1920, are requested to present them for payment on or after January 15, 1923, at the Guaranty Trust Company of New York: Notes maturing from January 15, 1924 to January 15, 1935, inclusive, and bearing numbers 1378 to 1835, 1837 to 2294, 2296 to 2753, 2755 to 3212, 3214 to 6885, all inclusive, for \$1,000, each, and D1 to D10, E1 to E10, F1 to F10 and G1 to G10, all inclusive, for \$100, each, at 103 per cent of par, and accrued interest.

TEXAS & PACIFIC.—Equipment Trust Authorized.—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of \$810,000 of 5 per cent certificates to be issued by the Commercial Trust Company of Philadelphia and to be sold at not less than 97½.

WESTERN MARYLAND.—Asks Authority for Equipment Trust.—This company has applied to the Interstate Commerce Commission for authority to issue \$450,000 of 5 per cent equipment trust certificates to be issued by the Commercial Trust Company of Philadelphia.

Railroad Administration Settlements

The United States Railroad Administration reports the following final settlements, and has paid out to or received from the several roads the following amounts:

Charleston & Western Carolina Railway Company.....	\$1,450,000
Georgia Southern & Florida Railway Company.....	50,000
Delaware & Hudson Company paid Director General.....	1,500,000
Beaumont Wharf & Terminal Company paid Director General....	19,935

Dividends Declared

Central of New Jersey—\$2.00, quarterly, payable November 15 to holders of record November 10.

Cleveland & Pittsburgh—Guaranteed, 87½ cents, quarterly; special guaranteed, 50 cents, quarterly; both payable December 1 to holders of record November 10.

Trend of Railway Stock and Bond Prices

	Oct 31	Last Week	Last Year
Average price of 20 representative railway stocks	69.50	72.40	56.00
Average price of 20 representative railway bonds	86.40	87.13	77.35

THE STATE OF UTAH, through Attorney General H. H. Cluff, has petitioned the Interstate Commerce Commission to be allowed to intervene in the proceedings of the Southern Pacific for permission to acquire control of the Central Pacific. The state intends to support the contention of the Southern Pacific and to oppose the application of the Union Pacific, which objects to the granting of the Southern Pacific application.

THE ST. LOUIS-SOUTHWESTERN has filed a petition in the Supreme Court of the District of Columbia for a writ of mandamus compelling the Interstate Commerce Commission to permit representatives of the railroads to inspect records of the Bureau of Valuation relating to the valuation of its property. The commission had denied the request of certain carriers to be permitted to examine and make copies of various detailed notes in possession of the bureau, unless and until such notes should be offered in evidence in a valuation hearing or in a court.

Railway Officers

Executive

John J. Mantell, manager of the New York region of the Erie, has been appointed vice-president of the New York region, with headquarters at New York City. Mr. Mantell



J. J. Mantell

was born at Elmira, New York, and was educated in the public schools of that city and at Elmira Academy. He began railway work in June, 1899, as a clerk and stenographer in the superintendent's office of the Erie. Later he served consecutively as yard clerk, chief yard clerk, yard master and general yard master at Croxton and Jersey City, N. J., and Susquehanna, Pa. He then became special agent in the office of the general superintendent at New York and afterwards served consecutively as trainmaster of the Dela-

ware and Jefferson divisions, terminal trainmaster at Jersey City and superintendent of the Wyoming division. In 1915 he was appointed superintendent of terminals at Jersey City and in May, 1917, became general superintendent, Lines East. During federal control, he was terminal manager at Jersey City for the Eastern and Alleghany regions and at the termination of federal control was appointed manager of the New York region.

W. E. McGraw, whose promotion to vice-president of the St. Louis Southwestern of Texas, and general superintendent of the St. Louis Southwestern lines, with headquarters at



W. E. McGraw

Tyler, Texas, was reported in the *Railway Age* of October 14, was born in 1875, at Fond du Lac, Wis. He entered railway service as a fireman on the Chicago, Milwaukee & St. Paul in 1893. From 1898 to 1900 he was a brakeman and conductor on the Wisconsin Central, and for the next six years he was superintendent of terminals of the Denver & Rio Grande and the Colorado & Southern at Denver, Colo. In 1906 he became superintendent of terminals for the Grand Trunk, and from 1907 to 1910

he was a trainmaster on the El Paso & Southwestern, with headquarters at El Paso, Texas. In 1910 he was promoted to superintendent of the lines in Mexico, which position he held until 1916, when he entered the employ of the St. Louis Southwestern as supervisor of terminal service of the entire line. He was promoted to superintendent of the Northern division in 1920, which position he held until his recent promotion.

Franklin G. Robbins, vice-president of the Chicago & Erie, has been appointed vice-president in charge of the Chicago

region of the Erie Railroad. Mr. Robbins became vice-president of the Chicago & Erie in May, 1922, and a photograph and a brief biographical sketch of him appeared in the *Railway Age* of June 3.

R. S. Parsons, vice-president in charge of operation of the Erie, has been appointed vice-president of the Ohio region with headquarters at Youngstown, Ohio.

W. A. Baldwin, manager of the Ohio region of the Erie with headquarters at Youngstown, Ohio, has been promoted to vice-president in charge of operation with headquarters at



W. A. Baldwin

New York. Mr. Baldwin was born at Elmira, N. Y., on July 26, 1876, and was graduated from Cornell University in 1896. He began railway work the same year as a chairman for the Erie. In May, 1899, he was promoted to rodman and some time later to assistant engineer. From March, 1902, until September, 1903, he served as trainmaster. He was then appointed division engineer and retained that position until 1909, from which time until December, 1910, he again served as trainmaster. He was promoted to superintendent of the Chicago and Lima divisions in 1910 and was transferred to the Jefferson and Delaware divisions in May, 1912, after which he was promoted to general superintendent, Lines East of Salamanca, and in 1917 was transferred to the Lines West with headquarters at Youngstown. He was appointed transportation assistant in June, 1918, and a month later was appointed general manager, in which position he served until April, 1920, when he was appointed manager of the Ohio region. In this position he was serving at the time of his recent advancement.

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Financial, Legal and Accounting

J. N. Davis, whose promotion to commerce counsel of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, was reported in the *Railway Age* of October 28, page 824, was born on February 27, 1880, at Clermont, Mo.



J. N. Davis

After graduating from Grand Island College in 1906, he entered the employ of the Fidelity & Casualty Company of New York, in the Chicago office, where he was assistant trial attorney. He remained in this capacity until May 1, 1911, when he entered railway service as assistant general solicitor of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, which position he was holding at the

time of his promotion to commerce counsel.

L. L. Atwood, whose promotion to contract attorney of the Missouri Pacific, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of October 21, was born on July 1, 1872, at Bridgeton, Mo. He was graduated from Washington University, St. Louis, Mo., in 1893, and entered

railway service as assistant claims attorney of the Missouri Pacific, with headquarters at St. Louis, Mo. He held this position until his recent promotion.

J. M. Salter, treasurer of the Texarkana & Fort Smith, has been appointed assistant treasurer of the Kansas City Southern. **H. H. Hoar** succeeds Mr. Salter on the Texarkana & Fort Smith.

A. K. Atkinson has been appointed assistant auditor of the Wabash with headquarters at St. Louis, Mo. Mr. Atkinson is 30 years of age. He entered railway service as an office boy in the office of the general auditor of the Denver & Rio Grande in October, 1909. He held various clerical positions in the office of the auditor of disbursements and, after serving as traveling accountant for several years, was appointed special accountant. On April 1, 1919, he entered the service of the Railroad Administration as field accountant and in July, 1921, was advanced to the position of supervising accountant. In March, 1922, he was appointed assistant to the comptroller and held this position until the time of his recent appointment.

I. C. McGee has been appointed treasurer of the Kansas City Southern, succeeding H. Visscher, deceased. Mr. McGee was born at Holt, Missouri, in December, 1873. He began



I. C. McGee

his railroad career with the Chicago, Burlington & Quincy (Hannibal & St. Joseph) as a telegraph operator in 1887 and served in various capacities including that of bridge train dispatcher at Kansas City, which position he resigned on November 1, 1898, to engage in business. He returned to railroad service in September, 1900, as clerk in the auditing department of the Kansas City Southern and in April, 1903, was elected treasurer of the Texarkana & Fort Smith with headquarters at Texarkana, Texas. He remained in that capacity until January, 1915, when he was elected assistant treasurer of the Kansas City Southern with headquarters at Kansas City, Mo., and held the latter position at the time of his appointment as treasurer.

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Traffic

T. A. Ward, chief clerk in the freight claim department of the New York Central at Buffalo, N. Y., has been promoted to district freight claim agent, with headquarters at Chicago, succeeding C. J. Lindemann, deceased.

G. E. Schnitzer, assistant general freight agent of the Chicago, Rock Island & Pacific, with headquarters at Little Rock, Ark., has been promoted to general freight agent. He is succeeded by **H. E. Riley**, chief clerk to the vice-president and freight traffic manager, with headquarters at Chicago.

W. L. Nichol, assistant general freight agent of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., has been promoted to general freight agent succeeding **C. Barham**, resigned to accept the position of chairman of the Southern Freight Association, with headquarters at Atlanta, Ga. Mr. Nichol was born on January 5, 1872, at Nashville, Tenn., and entered railway service as a delivery and bill clerk in the local office of the Nashville, Chattanooga & St. Louis at Atlanta, Ga., in 1891. In 1892, he became a claim and rate clerk in the general freight office at Nashville, Tenn., which position he held until 1897, when he was promoted to assistant local agent at the Tennessee Exposition, with the same headquarters. A year later he was promoted

to soliciting freight agent with the same headquarters, which position he held until 1899, when he was promoted to commercial agent with headquarters at Chicago. In 1901, he was transferred to Nashville, Tenn., where he remained until December 1, 1912, when he was promoted to assistant general freight agent, with the same headquarters, which position he was holding at the time of his recent appointment.

Operating

G. E. Donnatin has been appointed assistant trainmaster of the Los Angeles division of the Southern Pacific with headquarters at Indio, Cal.

E. J. Sturdevant has been appointed superintendent of transportation of the Minneapolis & St. Louis and the position of superintendent of car service has been abolished.

C. E. Green, trainmaster of the Chicago, Rock Island & Pacific, with headquarters at Cedar Rapids, Ia., has been promoted to superintendent of the Des Moines Valley division, with headquarters at Des Moines, Ia., succeeding C. T. Ames, deceased. He will be succeeded by **C. F. Redans**, trainmaster, with headquarters at El Reno, Okla. **C. G. Adams**, chief clerk to the vice-president and general manager has been promoted to trainmaster of the Chicago Terminal division with headquarters at Chicago.

G. L. Whipple, whose promotion to general superintendent of transportation of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, was announced in the *Railway Age* of October 28, was born on January 30, 1872, at Keithsburg, Ill. He entered railway service in 1888 as a telegraph operator on the Chicago, Milwaukee & St. Paul and held this position until 1894, when he was promoted to train dispatcher, which position he held until 1900. On the latter date he was promoted to chief dispatcher and held this position for the next six years. His next promotion was to trainmaster, which position he held from 1906 to 1910, when he was promoted to assistant superintendent of transportation. Two years later he was promoted to superintendent of transportation and has held this position until the time of his recent promotion.



G. L. Whipple

Mechanical

E. W. Smith, whose promotion to general superintendent of motive power of the Southwestern region of the Pennsylvania, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of October 21, page 776, was born on September 21, 1885, at Clarksburg, W. Va. He was graduated from the Virginia Polytechnic Institute at Blacksburg, Va., in 1905 and entered railway service as a shop hand in the Wilmington shop of the Pennsylvania on June 5, of that year. On August 1, 1906, he was promoted to special apprentice in the Altoona machine shop. On July 26, 1909, he was promoted to inspector in the office of the assistant to the general manager and on March 12, 1913, to foreman in the office of the general superintendent of motive power. On October 15, 1913, he was promoted to assistant master mechanic at the Wilmington shop, which position he held until April 19, 1915, when he was transferred to the Altoona machine shop. He was promoted to assistant engineer of motive power in the office of the general superintendent of motive power on July 1, 1916, and to master mechanic of the Harrisburg shops on the Philadelphia division on October 10, 1917. On May 26,

1918, he was promoted to superintendent of motive power of the Central Pennsylvania grand division, with headquarters at Harrisburg, Pa., which position he held until December 1, 1919, when he was transferred to the Eastern Pennsylvania grand division, with headquarters at Altoona, Pa. On March 1, 1920, he was promoted to engineer of transportation in the office of the vice-president in charge of operation, which position he was holding at the time of his recent promotion.

Engineering, Maintenance of Way and Signaling

J. W. Stone, assistant valuation engineer of the Pennsylvania System, has been appointed valuation engineer with headquarters at Philadelphia, effective October 1, succeeding C. A. Preston, retired.

Mr. Stone was born in Philadelphia and educated at Treemont Seminary, Norristown, Pa. He began his railroad career as a rodman in the engineering department of the Pennsylvania when he was but seventeen years of age. After four and one-half years in the engineering department he was transferred to the operating department where he served successively as transitman, assistant supervisor, supervisor and division engineer at various points on the lines east of Pittsburgh and Erie. On May 15, 1915, Mr. Stone was appointed assistant valuation engineer of the Pennsylvania Railroad, Lines East, and served in that capacity until his present appointment as valuation engineer of the Pennsylvania System.



J. W. Stone

P. Aagaard, president of the T. S. Leake Construction Company, Chicago, and formerly superintendent of buildings on the Illinois Central, has returned to that road as general building inspector, with headquarters at Chicago.

F. F. Seeburger, signal inspector on the Chicago, Milwaukee & St. Paul, with headquarters at Tacoma, Wash., has been promoted to signal supervisor, with headquarters at Deer Lodge, Mont., succeeding J. T. Mullaney, resigned.

Obituary

H. B. Green, general agent of the Baltimore & Ohio, with headquarters at Cleveland, Ohio, formerly division superintendent of the Cleveland division until its consolidation with the Newcastle division on April 1, died on October 30 at Cleveland from paralysis.

H. J. Simmons, formerly general manager of the El Paso & Southwestern, with headquarters at El Paso, Texas, died on October 16, at El Paso, Tex. He was born on July 17, 1869, at Adairville, Ky., and entered railway service as a rodman on the Huntsville & Monte Sano in April, 1888. From 1889 to 1893 he engaged in the private practice of civil engineering and from August, 1893, to August, 1895, he was civil engineer for the railroad commission of Texas. During the next seven years he was engineer and superintendent of the Galveston, La Porte & Houston and the Arizona & New Mexico, respectively. He entered the employ of the El Paso & Southwestern as chief engineer in April, 1902, and later held the positions of general superintendent and of general manager from which latter position he resigned on September 1, 1915. In March, 1920, he was appointed general agent and representative of the company in its dealings with the Federal Railroad Administration. At the time of his death he was general agent, with headquarters at El Paso, Tex., and was also in charge of valuation matters.